from the levels in the rule. In light of the high levels of such purchases by both GSEs in 2003, HUD considered raising these subgoals, but decided not to do so because HUD believes that the overall special affordable goals established in this final rule will provide sufficient incentives for the GSEs to play a major role in the special affordable multifamily mortgage market, and that in all likelihood they will continue to exceed these subgoals by significant margins for 2005–08.

7. Conclusion

HUD has determined that the Special Affordable Housing Goal in this rule addresses national housing needs within the income categories specified for this goal, while accounting for the GSEs' past performance in purchasing mortgages meeting the needs of very-low-income families and low-income families in low-income areas. HUD has also considered the size of the conventional mortgage market serving very-low-income families and low-income families in low-income areas. Moreover, HUD has considered the GSEs' ability to lead the industry as well as their financial condition. HUD has determined that a Special Affordable Housing Goal of 22 percent in 2005, 23 percent in 2006, 25 percent in 2007, and 27 percent in 2008 is both necessary and achievable. HUD has also determined that a multifamily special affordable subgoal for 2005–2008 set at 1.0 percent of the average of each GSE's respective dollar volume of combined (single-family and multifamily) 1999–2002 mortgage purchases in is both necessary and achievable. Finally, HUD is establishing a subgoal of 17 percent for the GSEs' purchases of single-family-owner mortgages that qualify for the special affordable goal and are originated in metropolitan areas, for 2005, with this subgoal remaining at 17 percent in 2006, then rising to 18 percent in both 2007 and 2008. The Secretary has considered the GSEs' ability to lead the industry as well as the GSEs' financial condition. The Secretary has determined that the goals, the multifamily subgoals, and the single-family-owner subgoals are necessary and appropriate.

Appendix D—Estimating the Size of the Conventional Conforming Market for Each Housing Goal

A. Introduction

In establishing the three housing goals, the Secretary is required to assess, among a number of factors, the size of the conventional market for each goal. This appendix explains HUD's methodology for estimating the size of the conventional market for each of the three housing goals. Following this overview, Section B summarizes the main components of HUD's market-share model and identifies those parameters that have a large effect on the relative market shares. Sections C and D discuss two particularly important market parameters, the size of the multifamily market and the share of the single-family mortgage market accounted for by single-family rental properties. Section E provides a more systematic presentation of the model's equations and main assumptions. Sections F,

G, and H report HUD's estimates for the Low- and Moderate-Income Goal, the Underserved Areas Goal, and the Special Affordable Housing Goal, respectively.

HUD received numerous comments on the proposed rule relating to its market methodology and the size of its market ranges for each of the three goals. These comments, and HUD's responses to them, are discussed throughout this appendix.

In developing this final rule, HUD has followed the same basic approach that it followed in the last two GSE final rules and the recent GSE proposed rule. HUD has carefully reviewed existing information on mortgage activity in order to understand the weakness of various data sources and has conducted sensitivity analyses to show the effects of alternative parameter assumptions. HUD is well aware of uncertainties with some of the data and much of this appendix is spent discussing the effects of alternative assumptions about data parameters and presenting the results of an extensive set of sensitivity analyses, many of the latter being directly related to comments received on the proposed rule.

In an earlier critique of HUD's market share model, Blackley and Follain (1995, 1996) concluded that conceptually HUD had chosen a reasonable approach to determining the size of the mortgage market that qualifies for each of the three housing goals.[1] Blackley and Follain correctly note that the challenge lies in getting accurate estimates of the model's parameters. In their comments on the 2000 Proposed GSE Rule, both Fannie Mae and Freddie Mac stated that HUD's market share model (outlined in Section B below) was a reasonable approach for estimating the goals-qualifying (low-mod, special affordable, and underserved areas) shares of the mortgage market. Freddie Mac stated:

We believe the Department takes the correct approach in the Final rule by examining several different data sets, using alternative methodologies, and conducting sensitivity analysis. We applaud the Department's general approach for addressing the empirical challenges.[2]

* * *

Similarly, Fannie Mae stated that "HUD has developed a reasonable model for assessing the size of the affordable housing market."[3]

However, in their comments on the proposed rule, both GSEs criticized HUD's implementation of its market methodology.[4] As noted above, their major criticisms and HUD's responses to their criticisms can be found throughout this appendix. HUD recognizes that there is no single, perfect data set for estimating the size of the affordable lending market and that available data bases on different sectors of the market must be combined in order to implement its market share model (as outlined in Section B below). As this appendix will show, HUD has carefully combined various mortgage market data bases in a manner which draws on the strength of each in order to implement its market methodology and to arrive at a reasonable range of estimates for the three goals-qualifying shares of the mortgage market. In this appendix, HUD demonstrates the robustness of its market estimates by reporting the results of numerous sensitivity analyses that examine a range of assumptions about the relative importance of the rental and owner markets and the goals-qualifying shares of the owner portion of the mortgage market.

This appendix reviews in some detail HUD's efforts to combine information from several mortgage market databases to obtain reasonable values for the model's parameters. The next section provides an overview of HUD's market share model.

B. Overview of HUD's Market Share Methodology[5]

1. Definition of Market Share

The size of the market for each housing goal is one of the factors that the Secretary is required to consider when setting the level of each housing goal.[6] Using the Low- and Moderate-Income Housing Goal as an example, the market share in a particular year is defined as follows:

Low- and Moderate-Income Share of Market: The number of dwelling units financed by the primary mortgage market in a particular calendar year that are occupied by (or affordable to, in the case of rental units) families with incomes equal to or less than the area median income divided by the total number of dwelling units financed in the conforming conventional primary mortgage market.

There are three important aspects to this definition. First, the market is defined in terms of "dwelling units" rather than, for

[1] Dixie M. Blackley and James R. Follain, "A Critique of the Methodology Used to Determine Affordable Housing Goals for the Government Sponsored Housing Enterprises," unpublished report prepared for Office of Policy Development and Research, Department of Housing and Urban Development, October 1995; and "HUD's Market Share Methodology and its Housing Goals for the Government Sponsored Enterprises," unpublished paper, March 1996.

[2] *See* Freddie Mac, "Comments on Estimating the Size of the Conventional Conforming Market for Each Housing Goal: Appendix III to the Comments of the Federal Home Loan Mortgage Corporation on HUD's Regulation of the Federal National Mortgage Association (Fannie Mae) and the Federal Home Loan Mortgage Corporation (Freddie Mac)", May 8, 2000, page 1.

[3] *See* Fannie Mae, "Fannie Mae's Comments on HUD's Regulation of the Federal National Mortgage Association (Fannie Mae) and the Federal Home Loan Mortgage Corporation (Freddie Mac)", May 8, 2000, page 53.

[4] *See* Freddie Mac, "Comments of the Federal Home Loan Mortgage Corporation on HUD's Proposed Housing Goals for the Federal National Mortgage Association (Fannie Mae) and the Federal Home Loan Mortgage Corporation (Freddie Mac) for the Years 2005–2008 and Amendments to HUD's Regulation of Fannie Mae and Freddie Mac," July 16, 2004; and Fannie Mae, "Fannie Mae's Comments on HUD's Proposed Housing Goals for the Federal National Mortgage Association (Fannie Mae) and the Federal Home Loan Mortgage Corporation (Freddie Mac) for the Years 2005–2008 and Amendments to HUD's Regulation of Fannie Mae and Freddie Mac," July 16, 2004.

[5] Readers not interested in this overview may want to proceed to Section C, which begins the market analysis by examining the size of the multifamily market.

[6] Sections 1332(b)(4), 1333(a)(2), and 1334(b)(4).

example, "value of mortgages" or "number of properties." Second, the units are "financed" units rather than the entire stock of all mortgaged dwelling units; that is, the market-share concept is based on the mortgage flow in a particular year, which will be smaller than total outstanding mortgage debt. Third, the low- and moderate-income market is expressed relative to the overall conforming conventional market, which is the relevant market for the GSEs.[7] The low- and moderate-income market is defined as a percentage of the conforming market; this percentage approach maintains consistency with the method for computing each GSE's performance under the Low- and Moderate-Income Goal (that is, the number of low- and moderate-income dwelling units financed by GSE mortgage purchases relative to the overall number of dwelling units financed by GSE mortgage purchases).

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[7] So-called "jumbo" mortgages, greater than $333,700 in 2004 for 1-unit properties, are excluded in defining the conforming market. There is some overlap of loans eligible for purchase by the GSEs with loans insured by the FHA and guaranteed by the Veterans Administration.

2. Three-Step Procedure

Ideally, computing the low- and moderate-income market share would be straightforward, consisting of three steps:

Step 1: Projecting the market shares of the four major property types included in the conventional conforming mortgage market, *i.e.*—

(a) Single-family owner-occupied dwelling units (SF–O units);

(b) Rental units in 2–4 unit properties where the owner occupies one unit (SF 2–4 units);[8]

(c) Rental units in one-to-four unit investor-owned properties (SF Investor units); and,

(d) Rental units in multifamily (5 or more units) properties (MF units).[9]

Step 2: Projecting the "goal percentage" for each of the above four property types (for example, the "Low- and Moderate-Income Goal percentage for single-family owner-

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[8] The owner of the SF 2–4 property is counted in (a).

[9] Property types (b), (c), and (d) consist of rental units. Property types (b) and (c) must sometimes be combined due to data limitations; in this case, they are referred to as "single-family rental units" (SF–R units).

occupied properties" is the percentage of those dwelling units financed by mortgages in a particular year that are occupied by households with incomes below the area median).

Step 3: Multiplying the four percentages in (2) by their corresponding market shares in (1), and summing the results to arrive at an estimate of the overall share of dwelling units financed by mortgages that are occupied by low- and moderate-income families.

The four property types are analyzed separately because of their differences in low- and moderate-income occupancy. Rental properties have substantially higher percentages of low- and moderate-income occupants than owner-occupied properties. This can be seen in the top portion of Table D.1, which illustrates Step 3's basic formula for calculating the size of the low- and moderate-income market.[10] In this example, low- and moderate-income dwelling units are estimated to account for 53.9 percent of the total number of dwelling units financed in the conforming mortgage market.

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[10] The property shares and low-mod percentages reported here are based on one set of model assumptions; other sets of assumptions are discussed in Section E.

Table D.1

Illustration of Market Share Calculations

Property Type	Low- and Moderate-Income Market		
	(Step 1) Share of Market (Percent)	(Step 2) Low-Mod Share (Percent)	(Step 3) Multiply (1) x (2) (Percent)
(a) SF-Owner	74.5	44.0	32.8
(b) SF-2-4 Rental	1.5	90.0	1.4
(c) SF Investor	9.0	90.0	8.1
(d) MF	15.0	90.0	13.5
Total Low-Mod Market	100.0		55.8

Property Type	Underserved Areas Market[1]		
	(Step 1) Share of Market (Percent)	(Step 2) Underserved Areas Share (Percent)	(Step 3) Multiply (1) x (2) (Percent)
(a) SF-Owner	74.5	27.0	20.1
(b) SF-2-4 Rental	1.5	42.5	0.6
(c) SF Investor	9.0	42.5	3.8
(d) MF	15.0	48.0	7.2
Total Underserved Areas Market	100.0		31.7

[1] This example assumes a 1990-Census-based definition of underserved areas. As discussed in section G, underserved areas in terms of 2000 Census geography increases the "underserved area shares" in step 2 by about six percentage points.

To examine the other housing goals, the "goal percentages" in Step 2 would be changed and the new "goal percentages" would be multiplied by Step 1's property distribution, which remains constant. For example, the Underserved Areas Goal [11] would be derived as illustrated in the bottom portion of Table D.1. In this example, units eligible under the Underserved Areas Goal are estimated to account for 31.4 percent of the total number of dwelling units financed in the conforming mortgage market.[12]

3. Data Issues

Unfortunately, complete and consistent mortgage data are not readily available for carrying out the above three steps. A single data set for calculating either the property shares or the housing goal percentages does not exist. However, there are several major data bases that provide a wealth of useful information on the mortgage market. HUD combined information from the following sources: the Home Mortgage Disclosure Act (HMDA) reports, the American Housing Survey (AHS), HUD's Survey of Mortgage Lending Activity (SMLA), the Census Bureau's AHS-based Property Owners and Managers Survey (POMS), and the Census Bureau's recent 2001 Residential Finance Survey (RFS). In addition, information on the mortgage market was obtained from the Mortgage Bankers Association, Fannie Mae, Freddie Mac and other organizations.

Property Shares. To derive the property shares, HUD started with forecasts of single-family mortgage originations (expressed in dollars). These forecasts, which are available from the GSEs and industry groups such as the Mortgage Bankers Association, do not provide information on conforming mortgages, on owner versus renter mortgages, or on the number of units financed. Thus, to estimate the number of single-family units financed in the conforming conventional market, HUD had to project certain market parameters based on its judgment about the reliability of different data sources. Sections D and E report HUD's findings related to the single-family market.

Total market originations are obtained by adding multifamily originations to the single-family estimate. Because of the wide range of estimates available, the size of the multifamily mortgage market turned out to be one of the most controversial issues raised during the initial rule-making process during 1995; this was also an issue that the GSEs focused on in their comments on the 2000 final rule and their comments on the 2004 proposed GSE rule. Because most renters qualify under the Low- and Moderate-Income Goal, the chosen market size for multifamily can have a substantial effect on the overall estimate of the low- and moderate-income market (as well as on the estimate of the special affordable market). Thus, it is important to consider estimates of the size of the multifamily market in some detail, as

[11] This goal will be referred to as the "Underserved Areas Goal".

[12] The example in Table D.1 is based on 1990 Census tract geography. As explained in Section G, switching to 2000 Census tract geography (scheduled for 2005) increases the underserved areas market share by approximately five percentage points.

Section C does. In addition, given the uncertainty surrounding estimates of the multifamily mortgage market, it is important to consider a range of market estimates, as Sections F–H do.

Goal Percentages. To derive the goal percentages for each property type, HUD relied heavily on HMDA, AHS, POMS and RFS data. For single-family-owner originations, HMDA provides comprehensive information on borrower incomes and census tract locations for metropolitan areas. Unfortunately, it provides no information on the incomes of renters living in mortgaged properties (either single-family or multifamily) or on the rents (and therefore the affordability) of rental units in mortgaged properties. The AHS, however, does provide a wealth of information on rents and the affordability of the outstanding stock of single-family and multifamily rental properties. An important issue here concerns whether rent data for the stock of rental properties can serve as a proxy for rents on newly-mortgaged rental properties. During the 2000 rule-making process, POMS data were used to examine the rents of newly-mortgaged rental properties; thus, the POMS data supplements the AHS data. The recently released RFS provides information on property shares (*e.g.*, the relative importance of rental versus owner properties) and several other important parameters in HUD's market model. The data base issues as well as other technical issues related to the goal percentages (such as the need to consider a range of mortgage market environments) are discussed in Sections F, G, and H, which present the market share estimates for the Low- and Moderate-Income Goal, the Underserved Areas Goal, and the Special Affordable Goal, respectively.

4. Conclusions

HUD is using the same basic methodology for estimating market shares that it used in its 1995 and 2000 final rules and its 2004 proposed rule. As demonstrated in the remainder of this appendix, HUD has attempted to reduce the range of uncertainty around its market estimates by carefully reviewing all known major mortgage data sources, by considering comments on the 2004 proposed rule, and by conducting numerous sensitivity analyses to show the effects of alternative assumptions. Sections C, D, and E report findings related to the property share distributions called for in Step 1, while Sections F, G, and H report findings related to the goal-specific market parameters called for in Step 2. These latter sections also report the overall market estimates for each housing goal calculated in Step 3.

In considering the levels of the goals, HUD carefully examined comments by the GSEs and others on the methodology used to establish the market share for each of the goals. Based on that thorough evaluation, as well as HUD's additional analysis for this final rule, HUD concludes that its basic methodology is a reasonable and valid approach to estimating market shares. As in the past, HUD recognizes the uncertainty regarding some of these estimates, which has led the Department to undertake a number of sensitivity and other analyses to reduce this uncertainty and also to provide a range of

market estimates (rather than precise point estimates) for each of the housing goals.

C. Size of the Conventional Multifamily Mortgage Market [13]

This Section C differs from the version published in the May 3, 2004, Proposed Rule in the following ways: The estimates from the "HUD New" and "Flow of Funds" methods discussed below in parts 2 and 3 have been updated through 2003, and responses to comments received on those methods have been added to those sections. The part titled "Most Likely Range" has been revised in light of the 2003 estimates and comments received. The discussion of "Loan Amount per Unit," part 5, has been revised in response to comments and to newly available data from the GSEs and the 2003 American Housing Survey. The multifamily mix discussion, part 6, has been revised in accordance with other changes. Section C.7 has been added on the multifamily mix as estimated from the newly released 2001 Residential Finance Survey (RFS). Lastly, Section C.8 discusses the multifamily mixes that will be examined in HUD's projection model for 2005–2008. Other than these changes and minor editorial corrections, the text in this section is identical to that in the Proposed Rule published May 3, 2004. Changes to Tables D.2 through D.5 are noted in the text and table notes. The old Table D.5 is now D.5a and Tables D.5b and D.5c have been added.

This section provides estimates of (a) the annual dollar volume of conventional multifamily mortgage originations and (b) the annual average loan amount per unit financed. The estimates build on research reported in the Final Rule on HUD's Regulation of Fannie Mae and Freddie Mac as published in the **Federal Register** on October 31, 2000, especially in Appendix D. That material from the 2000 Rule will not be repeated here but will be referenced or summarized where appropriate.

This section uses the information on dollar volume of multifamily originations and average loan amounts to estimate the number of multifamily units financed each year as a percentage share of the total (both single-family and multifamily) number of dwelling units financed each year. This percentage share, called the "multifamily mix", is an important parameter in HUD's projection model of the mortgage market for 2005–08 (see Section C.8 below)

Estimating this "multifamily mix" is important because relative to its share of the overall housing market, the multifamily rental sector has disproportionate importance for the housing goals established for Fannie Mae and Freddie Mac. This is because most multifamily rental units are occupied by households with low or moderate incomes. Between 1999 and 2002, for example, the GSEs purchased mortgages on approximately 26.1 million housing units, of which only 9.5 percent were multifamily rental units. However, of the GSEs' purchases qualifying as mortgages on low- and moderate-income housing during this period, 18 percent of the

units financed were multifamily rental units. Of the GSEs' purchases qualifying as special affordable mortgages during this period, 25 percent of the units financed were multifamily rental units.

The methods used in the 2000 Rule for estimating the size of the multifamily mortgage market and related variables were the product of extensive research by HUD and review by interested parties. The approach here is first to extend those estimates through 2002 using the same methods as in the 2000 Rule, and then to present alternative methods, along with commentary.

1. Data Sources

The data sources available for estimating the size of the multifamily mortgage market are more limited in scope and timeliness than was the case for the 2000 Rule. Among the key sources described in detail in the 2000 Rule, the following are now less useful:

Survey of Mortgage Lending Activity. This survey has been discontinued; estimates are available only through 1997.

Residential Finance Survey: The 1991 Residential Finance Survey (RFS) is now 13 years out of date. (See Section C.7 for results from the 2001 RFS.)

Urban Institute Statistical Model: This model, developed in 1995 and calibrated using data from 1975–1990, is now even further removed from its calibration period and probably captures current market conditions less accurately.

Estimates from the GSEs: As part of their comments on the proposed 2000 Rule, Fannie Mae and Freddie Mac shared with HUD their own estimates of the size of the multifamily mortgage market.

Fortunately, several key sources are available with the timeliness and quality comparable to the sources used during development of the 2000 Rule. These sources are: The Home Mortgage Disclosure Act (HMDA); activity reports submitted to HUD and the Office of Federal Enterprise Oversight (OFHEO) by Fannie Mae and Freddie Mac; non-GSE mortgage-backed security issuance from the Commercial Mortgage Alert database; and multifamily mortgage activity by life insurance companies, as estimated by the American Council of Life Insurers (ACLI). For background information on each of these sources, readers are referred to Appendix D of the 2000 Rule.

2. Estimates Based on "HUD New" Methodology

In the 2000 Rule, HUD developed a new methodology for estimating aggregate multifamily conventional loan originations. The method, here labeled "HUD New", was developed to make full use of the available data, and in particular the four sources listed above, which encompass most of the multifamily mortgage market.

The advantages of HUD New are that it provides reasonably complete coverage of the market, produces those estimates within nine months of the end of the year, generally includes only current originations and avoids double counting. The main disadvantage of HUD New is that it produces a lower bound estimate. Some loan originators are missed, including pension funds, government entities

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[13] This section is based on analysis by Jack Goodman under contract with the Urban Institute.

at the federal, state, and local levels, real estate investment trusts, and some mortgage bankers. Also, excluded are loans made by private individuals and partnerships. In addition to these exclusions, estimates from the covered lenders require some judgmental adjustments to conform to the definitions and time intervals of HUD New.

Despite these limitations, HUD New is one sound way to estimate the size of the multifamily conventional mortgage market. Although the method requires unavoidable judgment calls on which analysts may differ, sensitivity analysis can be performed to show the effects of different multifamily origination volumes on the goals qualifying market estimates (see Sections F–H). Due to the reasonableness of the HUD New approach, the value of maintaining continuity in estimation methods, and the fact that no data has become available in the past few years that would argue for modifying HUD New, it is used here for the baseline estimate of the size of the conventional multifamily mortgage market in 2000, 2001, 2002 and 2003.

The estimates from HUD New are presented in Table D.2. This table is the counterpart of Table D.5 in the 2000 Rule. The historical years have two columns each, one for the estimates presented in the 2000 Rule and one for estimates independently produced as part of this research. Footnotes to the table provide more complete descriptions of the components. Additional background on the calculations is provided in the 2000 Rule (Appendix D, Section C).

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Table D.2

Estimated Multifamily Conventional Origination Volume, 1995 - 2001

New HUD Methodology

($ millions)

	1995r	1996r	1997r	1998r	1999[6]	1999 r	2000[7]	2000 r	2001 (New)	revised 8/04 2001 (New)	2002[7] (New)	revised 8/04 2002 (New)	2003 (New)
Fannie Mae[1]	3,327	4,322	4,378	7,657	6,697	6,708	5,641	6,953	12,818	12,818	11,129	11,129	20,688
Freddie Mac[1]	1,049	1,493	1,501	2,620	4,803	4,811	5,096	4,040	6,372	6,372	7,140	7,138	9,979
CMBS multifamily[2]	n/a	4,436	7,136	15,677	10,805	10,805	8,271	7,221	9,244	9,244	7,892	9,084	12,016
HMDA Portfolio[3]	15,714	17,321	18,521	22,485	19,336	23,359	19,162	21,840	27,173	27,094	35,454	35,498	40,769
Life Companies[4]	4,419	4,115	4,403	4,465	2,865	2,865	3,805	2,094	3,373	3,373	6,089	4,522	5,550
Private pension Funds[5]	427	812	835										
St & local retirement funds[5]	228	197	228										
Federal credit agencies[5]	627	404	408										
St & local credit agencies[5]	358	1,394	840										
Total	26,149	34,494	38,250	52,904	44,506	48,548	41,975	42,148	58,980	58,901	67,704	67,371	89,002

[1] Source: OFHEO 2003 Annual Report, Tables 1 and 11. Includes cash purchases from lenders plus lender-originated securitizations; excludes non-GSE securities and repurchased GSE securities. Figures in OFHEO tables are reduced here by 33 percent to adjust for seasoned and government-insured loans, as explained in the 2000 Rule. Freddie Mac estimate for 2003 is derived from the $14.894 billion of multifamily mortgage purchases cited on page 44 of Freddie Mac's Annual Housing Activities Report for 2003.

[2] Commercial Mortgage Alert (CMA) database. Excludes agency, bank, thrift, insurance company, foreign, and seasoned securitizations.

[3] Source: HMDA tabluations by HUD; includes conventional multifamily loans originated by depositories but not sold, plus conventional multifamily loans acquired by depositories but not sold, less overlap.

[4] Source: American Council of Life Insurers, Mortgage Commitments Survey; figures are loan ommitments from Q4 of previous year plus commitments in first three quarters of current year (to approximate the time lag from loan commitment to origination).

[5] Source: Survey of Mortgage Lending Activity.

[6] HMDA figure projected based on 1998 HMDA in conjunction with 1998-1999 change in transactions volume for GSE and CMBS market segments.

[7] Estimate based on partial-year data.

The revisions to the historical estimates (*i.e.,* those in the 2000 Final Rule) result from both revisions to some of the input data and recalculations. For the years 1995 through 1998, the revisions are small for the estimates of total originations. The only one of note is a 5 percent upward revision to the estimate for 1995, prompted by a recalculation of the entry for life insurance companies. The revision to 1999 is larger, and results mostly from the substitution of the actual HMDA results for that year for the projected value used in the 2000 Rule. Surprisingly, the revised estimate for 2000 based on complete data for that year only varies slightly from the projection made at the time of the 2000 Rule. Most of the historical estimates produced in 2000 can be replicated or closely approximated, including those for Fannie and Freddie, CMBS, HMDA, and life insurance companies. The replicability of the CMBS figures is especially important, in light of all the selection criteria and hand calculations required to generate those estimates from the CMBS database. (In the 2000 Rule, the estimates for Freddie Mac and CMBS originations in 1997 appear to have been switched, and the revised estimates make this correction.)

The revised figures for 1999 and 2000 indicate that total conventional originations dropped 8 percent in 1999 from 1998's very strong level and another 13 percent in 2000. However, the HUD New estimate indicates that total conventional originations then jumped 40 percent in 2001 and further increased 15 percent in 2002. Judging from Survey of Mortgage Lending Activity estimates since 1970, the 2002 number is a new record high. For 2002, most of the increased volume is due to increases by HMDA lenders and life insurance companies.

One possible concern is that the significant increase in the HMDA number in 2002 was caused by the FFIEC relaxing its eligibility requirements between 2001 and 2002. This concern turns out to be unfounded. The FFIEC actually raised its eligibility requirements. The level of assets required by FFIEC to be reported to HMDA increased from $31 million in 2001 to $32 million in 2002. In addition, the number of HMDA reporters decreased from 7,771 in 2001 to 7,638 in 2002.

Compared with the version of Table D.2 in the Proposed Rule of May 3, 2004, the version here updates the estimates through 2003 and revises the 2001 and 2002 estimates slightly in response to newly available data. The data for 2003 point to a large, broad-based increase in the volume of multifamily

lending. Total conventional originations, estimated at $89 billion, are up 32 percent from 2002, easily reaching a new record high. A large increase was observed in each of the five market segments listed in Table D.2.

Several organizations commented on the HUD New method. Fannie Mae says it involves double counting of originations. However, the one example they offer—between life insurance company data and CMBS data—should not be subject to double counting because securitizations by life insurance companies are deleted from the CMBS totals, as noted in Table D.2 and in documentation included in the 2000 Rule. Freddie Mac, through its contractor, uses an approach similar to HUD New but uses different data sources. Inadequate details are provided on the tabulations and judgments applied to evaluate the method. Lastly, MBA expresses a preference for the estimates provided by HUD New and says, without providing detail, that estimates developed by their consultants are similar to those presented in HUD New.

The comments received fail to note the point made repeatedly in the proposed rule text that the HUD New estimates are lower bounds on the volumes of originations. While HUD New is characterized in the proposed rule as providing "* * * the baseline estimate of the size of the conventional multifamily mortgage market * * *", other language in the rule makes clear that "baseline" is used in the sense of "starting point." For example, the proposed rule also states that "* * * unavoidable gaps in coverage make the resulting HUD New figures lower-bound estimates of actual originations rather than best 'point' estimates" (p. 24450).

3. An Alternative Method

The HUD New method makes use of all the available sources of data on individual origination sources in attempting to estimate total conventional mortgage originations. However, as discussed in the 2000 Rule and summarized above, unavoidable gaps in coverage make the resulting HUD New figures lower-bound estimates of actual originations rather than best "point" estimates. In addition, even for those loans that are available, certain assumptions must be made to convert the available data into estimates corresponding to the desired definition and time periods. An alternative to the bottom-up approach of HUD New avoids some of the data problems. The Federal Reserve's Flow of Funds accounts provide the most complete and timely set of estimates

of multifamily mortgage credit. The Flow of Funds statistics refer to net changes in credit outstanding rather than gross originations. Specifically, balance sheet estimates of mortgage assets of lenders are used to produce estimated changes in holdings of mortgages over time. An alternative label for the resulting time series is "net change in mortgage debt outstanding."

The historical relationship between gross originations and net change can be used to estimate recent origination volume. Separate information on FHA multifamily activity can be used to convert the total originations to estimates of only conventional originations. The Flow of Funds method that is described in this section will be called "FoF-based."

Flow of Funds estimates of mortgage debt outstanding are based on data from sources of varying accuracy and timeliness. Bank and thrift institution holdings, taken from regulatory filings, are by all accounts highly accurate, as are those from the government sponsored agencies and direct Federal government holdings. The private MBS data and the life insurance company figures, both taken from Wall Street sources, are also thought to be reasonably accurate. Less accurate are the estimates of loans made by private individuals and certain institutions, for which comprehensive data on loans outstanding is provided only once every ten years, through the Residential Finance Survey. Fortunately, the depository institutions, GSEs, and mortgage-backed securities account for the bulk of all holdings of mortgage debt (approximately 72 percent, according to the Flow of Funds estimates for year-end 2001). Thus, most of the Flow of Funds data are from highly accurate sources.

The net change in mortgage debt outstanding in any year is the lower bound on originations. This is because the net change is defined as originations less the sum of principal repayments and charge offs. Historically loan originations have exceeded the net change by a considerable margin in both the multifamily and single-family markets. There are several reasons why the relationship of originations to net change differs between the multifamily and single-family sectors, but the basic principles apply to both sectors.

Table D.3 presents the annual estimates from the Flow of Funds. Also shown are the estimates of multifamily conventional originations as published in Table D.10 from the 2000 rule, and FHA originations from HUD administrative records.

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Table D.3

Multifamily Mortgage Lending

year	(A1) Net Change in Mortgage Debt Outstanding	(A2) revised Net Change in Mortgage Debt Outstanding	(B1) Conventional Mortgage Originations	(B2) revised Conventional Mortgage Originations	(C1) FHA Originations	(C2) revised FHA Originations	(D1) Total Originations	(D2) revised Total Originations	D2/A2	D2 - A2	Memo: Ten-Year Treasury Yield annual average (%)	ann. Avg. less avg. of previous five years (pct. points)
1990	-1.4	-1.4	n/a	n/a	1	1	n/a	n/a	n/a	n/a	8.6	-0.3
1991	-3.9	-3.3	23	23	1	1	24	24	-7.3	27	7.9	-0.5
1992	-12.3	-12.9	25	25	2	2	27	27	-2.1	40	7.0	-1.4
1993	-4.4	-4.4	29	29	3	2	32	32	-7.3	36	5.9	-2.3
1994	0.5	0.5	32	32	3	3	35	35	70.0	35	7.1	-0.5
1995	6.4	6.4	34	34	3	4	37	37	5.8	31	6.6	-0.7
1996	12.4	12.5	35	35	4	4	39	39	3.1	27	6.4	-0.4
1997	12.2	12.1	38	38	4	4	42	42	3.5	30	6.4	-0.2
1998	31.5	31.3	54	54	4	4	58	58	1.8	26	5.3	-1.2
1999	37.4	37.1	52 (47)	51	4	5	56 (51)	56	1.5	19	5.7	-0.7
2000	37.3	32.2	52 (43)	44	4	4	56 (47)	48	1.5	16	6.0	0.0
2001	48.3	45.0	67	62	5	5	71	67	1.5	22	5.0	-0.9
2002	44.2	43.2	62	58	4.5	7	66	65	1.5	22	4.6	-1.1
2003	--	55.2	62	75	--	8	--	83	1.5	28	4.0	-1.3

Sources and Notes:

The figures in columns A1, B1, C1, and D1 are those from the May, 2004, Proposed Rules. Those in A2, B2, C2, and D2 reflect updated estimates for past years from the Federal Reserve and FHA. Italics in Columns B1 and D1 indicate estimates not appearing in the 2000 Rule. Numbers in parentheses are estimates from the 2000 Rule.

Columns A through D are in billions of dollars;

Columns A1 and A2 are from Federal Reserve Board Flow of Funds Accounts.

Column B1 is mid-point of the range in Column 8 of Table D.10 in 2000 GSE Rule Appendix D where the 1999 value is labeled preliminary and the 2000 value is labeled projected.

Columns C1 and C2 estimates are from HUD.

Interest rates are from the Federal Reserve Board.

The ratio of mortgage originations to net change should be positively correlated with the proportion of total originations that are refinancings, for which the net change in mortgage debt would be expected to be low relative to that on loans taken out in connection with a property acquisition. (This is the pattern observed in the single-family mortgage market.) Refinancings, in turn, would be expected to be prevalent relative to purchase loans at times when interest rates are low relative to their recent past.

The historical evidence generally supports this expectation regarding the relationship of originations to net lending. As shown in Table D.3, total originations have been highest relative to net change when interest rates have been low relative to their recent past. [**Note:** Columns A1, B1, C1, and D1 are the figures appearing in the Proposed Rule version of this table. Owing to extensive revisions to the input data, new columns with the revised inputs and calculated values have been added to facilitate comparisons. These revised figures appear in Columns A2, B2, C2, and D2.] The ten-year Treasury yield, a common benchmark for pricing multifamily mortgages, has generally trended down since 1990. The early 1990s were all marked by high originations relative to net change, and these were also years in which interest rates were particularly low relative to their trailing five-year averages. In 1996 and 1997, by contrast, originations were less high relative to net change, and these were years in which interest rates were only slightly lower than their five-year trailing averages. In estimating conventional originations for 1999–2002, the 1998 experience is a useful benchmark. That year, total originations exceeded the net change by about 80 percent, as shown in Table D.3. There was also a big drop in interest rates in 1998 relative to the recent past, providing an incentive for refinancings. As shown in the table, interest rates rose slightly in 1999 and again in 2000, presumably diminishing the incentive to refinance. Nonetheless, the net change in mortgage debt was higher in 1999 and 2000 than it had been in 1998.

Putting all this together, it seems that the appropriate ratio of total originations to net change to apply to 1999 and 2000 would be below that of 1998 and of most other years of the 1990s. Applying a ratio of 1.5 to the net change estimates in 1999 and 2000 results in a total originations estimate of approximately $56 billion. Subtracting the $4 billion in FHA originations results in estimates of $52 billion for conventional originations in each year. A subjective confidence band around this point estimate is at least +/− $2 billion.

Turning to the estimate for 2001, the first thing to note is that net change in mortgage debt jumped to $48 billion from $37 billion of the previous two years. The second thing to note is that interest rates fell by nearly a percentage point in 2001 relative to their past average. For both of these reasons, total originations in 2001 would be expected to have been higher than in 1999 or 2000. How much higher is a subjective judgment, but 1.5 would seem an appropriate multiple to apply to the net change number in 2001. This is the same multiple as in 1999 and 2000, despite

the added refinancing incentive in 2001. By the beginning of 2001, there were relatively few properties ''at risk'' of refinancing. Many presumably had refinanced in one of the preceding years, and lock-out provisions, yield maintenance agreements, and other loan conditions may have kept these properties from coming in for refinancings. Also, there may have been some short-run capacity problems in the multifamily loan origination industry in 2001 that further curtailed volume.

Applying the 1.5 multiple to 2001's net change of $48 billion yields a total originations estimate of $71 billion. Subtracting FHA business results in a conventional originations estimate of $67 billion, to which a subjective confidence band of at least ±$2 billion appears warranted.

As seen in Table D.3, the Flow of Funds methodology indicates that total conventional originations decreased 6.5% between 2001 and 2002. In 2002, the net change in mortgage debt decreased slightly to $44 billion. Using the 1.5 multiple for 2002's net change of $44.2 billion yields a total originations estimate of $67 billion. Subtracting $4.5 billion of FHA business results in a conventional originations estimate of $62 billion.

This Flow of Funds estimate is over $5 billion less than the estimate from HUD New. This is surprising given that the HUD New method is supposed to serve as a lower boundary on the size of the multifamily market, while the Flow of Funds method is designed to produce a higher ''point'' estimate of the actual size of the market.

Like the estimates for HUD New, those for the Flow of Funds method have been revised and updated through 2003 to incorporate new data. As with HUD New, the Flow of Funds method suggests a large increase in conventional mortgage lending in 2003. The estimate for conventional originations in 2003 is $75 billion, up 29 percent from the revised estimate for 2002. In percentage terms, the increase in 2003 almost matches that of the HUD New method's estimates of Table D.2.

The originations estimates for earlier years, and especially 2000–2002, have been revised downward in response to revisions by the Federal Reserve to the Flow of Funds accounts and by an update to HUD's FHA estimate for 2002. The downward revision was largest for 2000, for which year the new figure of $44 billion of conventional originations is $8 billion less than the earlier estimate.

The big increase in estimated originations in 2003 is largely the result of the Federal Reserve's estimate of a large increase that year in net change in mortgage debt outstanding, shown in column A2 of Table D.3 The increase in 2003 in the Flow of Funds accounts is likely to be fairly accurate, because almost all of it is attributable to holder types for which the Fed has reliable statistics, specifically depository institutions and GSE mortgage securities. As in 1999– 2002, in 2003 the net change was converted into total originations by applying a multiplier of 1.5, under the assumption that the continued decline in interest rates

provided even stronger incentives for refinancing. As shown in the last columns of Table D.3, ten-year Treasury yields in 2003 averaged about 60 basis points below those of 2002, and approximately 130 basis points below the average of the previous five years.

Comments on the Flow of Funds method for estimating multifamily originations focused on the approach to converting net change into loan originations. Fannie Mae argued that it was preferable to convert by applying a liquidation rate to the stock of mortgage debt and deriving originations as net change plus estimated liquidations. A trade organization noted the historical instability of the ratio of originations to net change and argued that the ''HUD New'' approach to estimating originations was superior. Freddie Mac and its consultant, while not commenting directly on the Flow of Funds method, expressed a preference for a modified version of HUD New, as described in the previous part of this section.

The most recent data suggest that originations may in fact have been higher than estimated in the Flow of Funds approach and that the 1.5 multiplier used to convert net change into originations is too low. The reason is that in both 2002 and 2003, the 1.5 multiplier results in estimated conventional originations that are less than those produced by the HUD New method. As discussed earlier, HUD New provides a lower bound estimate. Fannie Mae's lower estimates of originations in recent years, relative to those in the proposed rule, result from the liquidation rate used in the calculation, which is that from Fannie Mae's own portfolio. But Fannie Mae's liquidation rate would be expected to fall below the market wide average, because Fannie Mae's multifamily business has been growing more rapidly than the market overall, and as a result its loans presumably on average are ''younger'' and consequently less likely to prepay or be retired than are the loans in the market as a whole. Lastly, regarding the historical instability of the ratio of originations to net change noted by a trade organization, Table D.3 of the proposed rule also presented the annual difference between originations and net change, which is considerably more stable. The differences corresponding to the 1.5 multiplier for the past several years are, as shown in D.3, below the historical averages. This is additional evidence that the 1.5 multiplier is perhaps too low.

4. Most Likely Range

In the 2000 Rule, estimates of conventional multifamily loan originations from various sources and methods were evaluated in determining the most likely range of annual originations. Those estimates were summarized in Table D.10 in the 2000 Rule. Some of the estimates from that table are reproduced below, in Table D.4, along with updates and estimates from the Flow of Funds method.

Both HUD New (column #4 in Table D.4) and FoF-based (column #9) indicate a surge in lending activity in 2001. Some corroboration of this jump is provided by other indicators, flawed though they may be. HMDA has well-documented coverage problems with multifamily loans, but it is

noteworthy that HMDA-estimated conventional originations stayed in the same general range ($26 to $31 billion) in 1998–2000 before jumping to $36 billion in 2001. The composite of 1.25 times HMDA originations plus life insurance commitments, described in the 2000 Rule and updated here in column #5, also follows this basic path. Similarly, aggregate GSE multifamily purchases and securitizations stayed in the same general level in 1998–2000, before jumping in 2001, although this trend reflects changes in both market size and GSE market share. FHA originations (not shown) also rose substantially in 2001, but this too may indicate more than just market size trends.

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Table D.4

Estimates of Conventional Multifamily Mortgage Market ($ billions)

	(1) SMLA	(2) SMLA Adjusted	(3) New	(4) New Revised & Adjusted	(5) ACLI+ 1.25*HMDA	(6) Urban Institute	(7) Fannie Mae	(8) Freddie Mac	(9) FoF Based	(10) Misc	(11) Likely Range in 2000	Likely Range now	(12) Multifamily Mix (Pct) Min	Max
1990	$30.6	$25.9			$51.4					$37.4 (RFS)				
1991	$24.6	$22.7			$11.8						$22-24		16%	17%
1992	$25.2	$23.5			$14.0	$28.7					$24-26		11%	12%
1993	$30.0	$28.9			$17.9	$30.2					$28-30		13%	14%
1994	$31.7	$31.7			$21.4	$33.8	$32.2				$31-33		20%	21%
1995	$37.9	$32.4	$24.8	$26.1	$20.4	$38.5	$33.7	$21-27			$33-35		20%	21%
1996	$43.7	$33.3	$34.5	$34.5	$23.8	$40.6		$24-29			$33-37		17%	19%
1997	$44.6	$35.5	$38.2	$38.3	$28.8	$43.9	$35-40	$28-30			$36-40		18%	20%
1998			$52.9	$52.9	$38.3	$40.6	$40-45	$40-50			$52-55		13%	15%
1999			$44.5	$48.6	$42.2	$48.3	$37-41		$51 ($52)		$45-48	$50-54	15%	17%
2000			$42.0	$42.1	$34.8	$50.6			$44 ($52)		$42-44	$48-52	16%	18%
2001				$58.9($59.0)	$48.4				$62 ($67)			$65-69	13%	14%
2002				$67.4($67.7)	$61.3				$58 ($62)			$60-64 and $67.4	9.9% and 11.1%	10.5%
2003				$89.0					$75			$85-$100		

Sources and Notes:
The following entries are from Table D.10 of the 2000 Rule: Columns 1-3,5 (through 1998), 6-8, 10, and "Likely Range in 2000". All of these entries are described and interpreted in the 2000 Rule.
Columns 4,9, and "Likely Range Now" are derived and explained in the text of this Appendix.

Note: POMS $36.7 appears in column (10) Misc at the 1995 row.

Column #11 of Table D.4 gives the likely ranges of originations for each of the years. These are based on the estimates from all sources and interpretations of their strengths and weaknesses. In 1999, the $4 billion upward revision to the HUD New estimate from the preliminary figure reported in the 2000 Rule, together with the higher estimate produced by the FoF-based method, justify an upward revision to the $45–$48 range estimated in the 2000 Rule. The revised range is set at $50–54 billion. In 2000, HUD New (revised and extended version) suggests that originations were somewhat lower than in 1999, but FoF-based has originations holding at $52 billion. Balancing these conflicting indicators, a range of $48–$52 billion is selected for 2000. Finally, all indicators point to a substantial pickup in 2001, and the range that seems to fit best with those indicators is $65–$69 billion.

In 2002, the various methods of estimation give a mixed picture. HUD New indicates a surge in lending activity in 2002, while the flow of funds method shows a decrease in lending activity. Other methods also show divergent trends. The composite of 1.25 times HMDA originations plus life insurance commitments also shows a significant increase between 2001 and 2002. On the other hand, aggregate GSE multifamily purchases and securitizations showed a slight decrease between 2001 and 2002. FHA originations (not shown) also decreased slightly in 2002.

While this is a subjective judgment, 1.5 may not be the appropriate multiple to apply to net mortgage debt outstanding in the flow of funds model in 2002. The difference between the flow of funds estimate and the HUD estimate cannot be reconciled without adjusting the FoF multiple. Given the low interest rates in 2002, and a refinancing boom in the single-family mortgage market, it could be that the multifamily market also had a

significant amount of refinancing activity. In such a case, there could be an increase in the size of the multifamily market without a corresponding increase in net mortgage debt outstanding. A higher multiple would need to be applied to the Flow of Funds model to compensate for the increase in multifamily refinancings.

Due to data limitations, the above remains a speculation. The largest increase in multifamily volume came from HMDA reporting lenders. The HMDA data do not allow for the separation of multifamily purchase originations from refinancings. Other data sources need to be explored to determine if an adjustment to the FoF-based model is appropriate.

Both HUD New and the FoF-based method indicate a large increase in conventional multifamily loan originations in 2003. But the FoF estimates for each of the previous four years have been revised downward in light of revised input data. According to these updated and revised estimates, conventional multifamily originations by HUD New have exceeded the estimates of FoF in two of the past five years, and in the other three years FoF exceeded HUD New by only narrow margins. Because HUD New produces lower bound estimates of originations, whereas FoF is intended to provide best point estimates, the Department concludes that the 1.5 multiplier applied in the FoF method is too low, and as a result the FoF estimates understate originations in the past several years. In light of this probable underestimate of the multiplier, and after consideration of comments received, the Department believes that the likely ranges of conventional originations for 2002 and earlier years as published in the May, 2004, Proposed Rule continue to be reasonable estimates, although likely on the conservative side. As for 2003, the estimates from HUD New and FoF indicate a substantially higher

likely range, which the Department has set at $85 billion to $100 billion. As explained in Section C.6 below, HUD will conduct sensitivity analyses in Sections F–H showing the effects of different multifamily mixes on the historical estimates of the goals-qualifying shares of the mortgage market.

5. Loan Amount per Unit

In determining the size of the conventional multifamily mortgage market for purposes of the GSE rules, the measure of market size is the annual number of conventionally financed multifamily rental housing units. The number of units is derived by dividing the aggregate annual originations by an estimate of the average loan amount per housing unit financed. For this reason, accuracy in the estimate of loan amount per unit is as important as accuracy in the dollar estimate of aggregate conventional originations. A 10 percent error in either will result in a 10 percent error in the estimate of market size.

The 2000 Rule used estimates of loan amount per unit drawn from various sources. As summarized in Table D.9 of the 2000 Rule and the accompanying text, the estimates for 1993–1998 were taken from the GSEs and for 1999 from CMBS data. ''Unpaid Principal Balance'' or UPB—a balance sheet measure which for current year loan originations will differ little from the initial loan amount—is used to calculate aggregate originations of loans bought or securitized by the GSEs or pooled into non-GSE mortgage-backed securities. The figures from Table D.9 of the 2000 Rule are reproduced below in Table D.5a, along with updated estimates from all three sources for 2000, 2001 and 2002. The estimates that are new since the 2000 Rule appear in italics.

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Table D.5a

Multifamily Loan Amount per Unit, 1990-2003

	UPB per unit ($)*	Fannie Mae UPB ($ millions)	Fannie Mae units	Fannie Mae UPB/unit ($)	Freddie Mac UPB ($ millions)	Freddie Mac units	Freddie Mac UPB/unit ($)	CMBS UPB ($ millions)	CMBS units	CMBS UPB/unit ($)	Rent Adjusted UPB/unit ($)
1990	$ 23,847										
1991	$ 24,951										
1992	$ 25,888										
1993	$ 24,300	$ 4,602	186,471	$ 24,682	$ 191	10,794	$ 17,710				
1994	$ 21,156	$ 4,735	221,420	$ 21,383	$ 913	45,538	$ 20,052				
1995	$ 24,825	$ 5,958	235,358	$ 25,316	$ 1,582	68,381	$ 23,138				
1996	$ 25,268	$ 7,037	272,931	$ 25,782	$ 2,350	98,574	$ 23,843				
1997	$ 27,266	$ 6,896	253,065	$ 27,251	$ 2,716	99,469	$ 27,304				
1998	$ 31,041	$ 12,503	393,397	$ 31,782	$ 6,578	221,319	$ 29,723	$ 12,465	406,006	$ 30,702	
1999	$ 30,719	$ 9,393	294,091	$ 31,938	$ 7,621	191,492	$ 39,798	$ 9,238	300,724	$ 30,719	
2000	*$ 32,500*	*$ 10,078*	*289,509*	*$ 34,811*	*$ 6,781*	*163,580*	*$ 41,454*	*$ 6,223*	*184,397*	*$ 33,748*	
2001	*$ 34,000*	*$ 18,688*	*503,909*	*$ 37,086*	*$ 11,837*	*315,370*	*$ 37,534*	*$ 7,647*	*234,948*	*$ 32,548*	*$ 34,000*
2002	*$ 37,040*	*$ 18,278*	*461,397*	*$ 39,614*	*$ 13,330*	*333,038*	*$ 40,025*	*$ 5,662 ***	*152,863 ***	*$ 37,040*	*$ 35,000*
2003	$ 39,082	$ 33,270	809,703	$ 41,089	$ 21,588	593,949	$ 36,347				$ 34,805

Figures in italics for 2000, 2001 and 2002 are new; all other figures are from Table D.9 of the 2000 Rule.

* 1990-1992: Average single-family conventional conforming loan amount/3.57. See 2000 Rule for details.

1993-1998: Weighted average of Fannie Mae and Freddie Mac.

1999: CMBS data.

2000-2001: See text.

** Data for CMBS only covers the first 10 months of 2002.

Several options are available for developing estimates for 2000, 2001 and 2002. The first is to use the UPB (unpaid principal balance) per unit estimates from the GSEs. These estimates, taken from the Fannie Mae and Freddie Mac annual activity reports to HUD, are as follows, computed as in the 2000 Rule as a unit-weighted average of the unpaid principal balance (UPB) per multifamily unit in Fannie Mae's and Freddie Mac's portfolios:

1997	$27,266
1998	31,041
1999	35,038
2000	37,208
2001	37,258
2002	39,787

The figure for 2002 is approximately 46 percent higher than in 1997. Both Fannie Mae and Freddie Mac's portfolios generate estimates of between $39,000 and $40,000 for 2002.

Several alternative approaches to estimating loan amount per unit are available. The first is to base the estimate on CMBS data, as was done for 1999 in the 2000 Rulemaking. As shown in the last column of Table D.5, the estimates of UPB/unit from this source are somewhat below those of the GSEs and indicate less increase since the late 1990s.

In the first 10 months of 2002, CMBS properties showed a UPB/unit of $37,038, a nearly 14 percent jump over the previous year. Although slightly below the UPB/unit for the GSEs, the CMBS numbers are closer to the GSE calculations than in previous years.

Another approach is to move the 1999 estimate of UPB/unit forward by some justifiable index. The 2001 estimates use the change in average rent on multifamily rental units from the American Housing Survey. Because AHS data are not available for 2002, the 2002 estimate uses the consumer price index for rent of primary residence. Both AHS and CPI rent estimates are listed below:

Year	Median	Mean	CPI
1999	$550	$592	177.5
2001	590	647	192.1
2002	N/A	N/A	199.7

There is some variation between the two measures. In the AHS, median rent rose 7.3 percent over this two-year period, and mean rent increased 9.3 percent. Meanwhile, the CPI showed an increase of 8.2 percent. In 2001, using the AHS produces an estimate of $34,000. The CPI yields a smaller estimate for 2001; applying the 8.2 percent increase from the CPI results in a 2001 estimate of $33,200. Since the AHS data are unavailable in 2002, the CPI provides a 2002 estimate of approximately $35,000.

In 2001, the rent-adjusted 1999 estimate was in between the estimates from the CMBS and GSE data, and was a fair estimate of the actual size of the market. In 2002, however, the rent-adjusted number is below both the CMBS and GSE calculations. The rent-adjusted number could be underestimating the 2002 UPB/unit. Either the CMBS or GSE calculations, or an average of the various methods could be used. Sections F–H will report the results of sensitivity analyses showing the effects of the different multifamily mortgage estimates and different per unit amounts on the goals-qualifying shares for the year 2002. Under the various estimates, the multifamily mix (defined below) for 2002 varies from 9.5 percent–11 percent.

Since the proposed rule was issued by the Department, data for 2003 have become available that permit updates of some of the sources of UPB/unit estimates. The GSEs' experience, shown in the bottom row of Table D.5a, was mixed. Fannie Mae's UPB/unit increased about 4 percent from 2002, but Freddie Mac's dropped 9 percent. The volume-weighted average UPB/unit for the GSEs in 2003 was $39,082, off about 2 percent from the 2002 average of $39,787 shown in the text table above.

The most recent rent estimates from the American Housing Survey also suggest limited or negative recent growth in UPB/unit. The median and mean rents for 2003 that correspond to those in the table above are $609 and $671. Given the logic of this method as described in the proposed rule, it seemed most appropriate to use the percent increase in AHS rents from 1999 to 2003 to update the 1999 UPB/unit ($30,719) to a 2003 figure. Using the 13.3 percent increase in mean rent between 1999 and 2003 (the increase in median was only 10.7 percent) and moving the baseline UPB/unit from 1999 forward to 2003 by this proportion brings the 2003 UPB/unit to $34,805. That is the number appearing in Table D.5a. For comparison, the CPI rent index rose 15.8 percent between 1999 and 2003.

In commenting on HUD's UPB/unit estimates for 2000–2002, as published in the May 2004 Proposed Rule, both Fannie Mae and Freddie Mac expressed the view that the estimates were too low. They cited both their own experience and other evidence and argued that HUD's reliance on CMBS and rent data, and switching of benchmark years, resulted in UPB/unit estimates that were substantially below the actual market averages.

In reviewing the comments and in light of these new data HUD has concluded that the estimates in the proposed rule likely were too low. The more difficult determination is where to set the estimates. The Department has not revised its estimate of UPB/unit for 2002 and earlier years, because of this uncertainty. The situation is similar to that discussed in the previous part of this section in discussing the likely range of conventional multifamily originations, where the new data lead the Department to think the Flow of Funds estimates may be too low, but no adjustments were made to the likely range as reported in Table D.4. If adjustments were made to the historical estimates of originations and UPB per unit, the revisions would be at least partially offsetting, with little net effect on the historical estimates of number of multifamily units financed. As for 2003, weighing all available information, the Department has set the UPB/unit at $39,082, the weighted average of the GSEs' actual UPB/unit for that year. As explained in the next section, goals-qualifying estimates for 1995–2002 are reported in Sections F–H that include multifamily mixes approximately two-three percentage points lower that the multifamily mixes suggested by the most likely range of multifamily dollar estimates and the UPB/unit estimates.

6. Multifamily Mix During the 1990s

This section uses the information on dollar volume of multifamily originations (Table D.4) and average loan amounts (Table D.5a) to estimate the number of multifamily units financed each year as a percentage share of the total (both single-family and multifamily) number of dwelling units financed each year. Because of the high goals-qualifying shares of multifamily housing, the multifamily mix is an important parameter in HUD's projection model for the overall market; other things equal, a higher multifamily mix (or conversely, a lower share of single-family loans) leads to a higher estimate of goals-qualifying loans in the overall mortgage market. This percentage share, or "multifamily mix", is reported in the last two columns of Table D.4 for the years 1991 to 2002.[14] The "minimum" ("maximum") multifamily mix figure reflects the low (upper) end of the "likely range" of multifamily dollar originations, also reported in Table D.4. Because they will be compared with other estimates of the MF mix, these "likely range" data are reproduced in the first two columns of Table D.5b.

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[14] 1990 is excluded from this calculation because of the unusually high multifamily mix that year.

Also, the estimated multifamily mix from the HUD New Method is also provided for 2002 since it was greater than the estimate from the Flow of Funds method.

Table D.5b

Multifamily Mixes: Additional Analysis

Year	Most Likely Range of Multifamily Mixes (from Table D.4)		Mid-Point Multifamily Mix Used	Lower Multifamily Mix Used	ICF's Best Estimates of Multifamily Mix
	Minimum	Maximum			
1991	16.0%	17.0%			
1992	11.0%	12.0%			
1993	13.0%	14.0%			
1994	20.0%	21.0%			17.2%
1995	20.0%	21.0%	20.5%	17.5%	16.5%
1996	17.0%	19.0%	18.0%	15.0%	13.7%
1997	18.0%	20.0%	19.3%	16.3%	14.4%
1998	13.0%	15.0%	14.1%	12.0%	11.3%
1999	15.0%	17.0%	16.1%	14.0%	12.3%
2000	16.0%	18.0%	17.2%	15.0%	13.8%
2001	13.0%	14.0%	13.5%	12.0%	10.8%
2002	11.0%	11.0%	11.1%	9.5%	10.2%
Averages					
1991-2002	15.3%	16.6%			
1994-2002	15.9%	17.3%			13.4%
1995-2002	15.4%	16.9%	16.2%	13.9%	12.9%
1997-2002	14.3%	15.8%	15.2%	13.1%	12.1%
1999-2002	13.8%	15.0%	14.5%	12.6%	11.8%
Recent Home Purchase Years (97,99,00)	16.3%	18.3%	17.5%	15.1%	13.5%
Recent Refinance Years (98,01,02)	12.3%	13.3%	12.9%	11.2%	10.8%

Table D.5b includes several averages of the MF mix for different time periods between 1991 and 2002. Based on the ''likely range'' of annual conventional multifamily origination volume, multifamily units have represented 15.3 percent (the average of the ''minimum'' figures) to 16.6 percent (the average of the ''maximum'' figures) of units financed each year between 1991 and 2002. Considering the mid-points of the ''likely range'', the multifamily mix averaged 15.9 percent during this period. Notice that the multifamily mix is lower during years of heavy refinancing when single-family originations dominate the mortgage market; the multifamily mix was only 13–14 percent during 1993, 1998, and 2001, and 11 percent (or less) during 2002.[15] As discussed in Sections F–H, record single-family originations ($3.8 trillion) during 2003 likely resulted in that year having a lower multifamily mix than any of the years between 1991 and 2002. Sensitivity analyses are conducted to show the effects of multifamily mixes less than the previous lows of 11 percent in 1992 and 2002.

As discussed earlier, several commented that HUD had understated the UPB/unit, which caused HUD to overstate the share of newly-mortgage multifamily dwelling units. Section C.5 explains that HUD's UPB/unit estimates for recent years are likely too low but that could be offset by low estimates of originations. To allow for different views about the volume of mortgage originations and the UPB/unit, Sections F–H will conduct sensitivity analyses with lower multifamily mixes than suggested by the mid-points of the likely ranges in Table D.5b. The third column of Table D.5b lists the ''mid-point'' MF mixes while the fourth column of Table D.5b lists the lower MF mixes used in Sections F–H. Over the 1995–2002 period, the average MF mix ranged from 13.9 percent (the lower MF mix approach) to 16.2 percent (the mid-point MF mix approach).[16] Over the more recent period, the averages have ranged from 12.6 percent to 14.5 percent for 1999–

2002, from 15.1 percent to 17.5 percent for recent home purchase years, and from 11.2 percent to 12.9 percent for the refinance years of 1998, 2001, and 2002.

The impact of the lower MF mix on the UPB/unit assumption can be illustrated for the case of 2001, which assumed a loan-amount-per-unit figure of $34,000. Reducing the MF mix from 13.5 percent to 12.0 percent is consistent with increasing the UPB/unit from $34,000 to $39,075 (holding constant mortgage originations at $67 billion). Of course, the lower MF mix of 12.0 percent is consistent with a lower volume of mortgage originations if the initial UPB/unit of $34,000 is retained.

Fannie Mae (op.cit., page I–29) developed three sets of UPB-per-unit figures for 1997 to 2002; below Fannie Mae's estimates are compared with the UPB-per-unit figures that result from HUD's model that uses the lower MF mixes.

	Fannie Mae's Estimates			HUD's Lower MF Mix
	High	Low	Baseline	Model
1997	$35,063	$28,488	$31,776	$33,582
1998	40,155	32,626	36,390	37,492
1999	42,430	33,992	38,211	36,260
2000	45,797	37,210	41,504	38,142
2001	48,363	39,295	43,829	39,075
2002	53,507	43,474	48,491	44,009
Average	44,219	35,847	40,033	38,093

Three points stand out. First, there is a rather large differential between Fannie Mae's Low and High UPB-per-unit figures, reflecting the lack of available data. Second, HUD's UPB-per-unit estimates based on its lower MF mix model are in between Fannie Mae's Low and Baseline estimates. Third, the differentials between HUD's and Fannie Mae's Baseline estimates are largest during the two heavy refinance years of 2001 and 2002.

HUD's conducting its market share analysis with the lower MF mixes (as well as with the mid-point MF mixes) recognizes different views about the size of the mortgage market and the UPB/unit. This does not mean that the HUD's range of MF mixes includes estimates as low as those suggested by ICF (Freddie Mac's contractor) and Fannie Mae.

ICF's estimates of multifamily shares for the 1994–2002 were lower than those that HUD used (as reported in Table D.5b). ICF's Best Estimates and Lower Bound Estimates were as follows:[17]

	Best estimates (percent)	Lower bound estimates (percent)
1994	17.2	14.0
1995	16.5	14.0
1996	13.7	11.5
1997	14.4	12.3
1998	11.3	9.9
1999	12.3	10.7
2000	13.8	11.7
2001	10.8	9.0
2002	10.2	8.5

Various averages of ICF's Best Estimates are calculated in Table D.4b. Over the 1995–2002 period, ICF's Best Estimates averaged 12.9 percent, while HUD's mid-point estimates averaged 16.2 percent and HUD's lower MF mix estimates averaged 13.9 percent. Thus, the average of ICF's Best Estimates is slightly lower (one percentage point) than the average of HUD's lower MF mixes. Over the more recent 1999–2002 period, ICF's Best Estimates averaged 11.8 percent, while HUD's mid-point estimates

averaged 14.5 percent and its lower MF mix estimates averaged 12.6 percent.

ICF also produces lower bound estimates of the multifamily share of the market (see above list for 1994 to 2002). ICF's lower bound estimates for the multifamily mix averaged 11.3 percent between 1994 and 2002. It is interesting that ICF's lower bound estimates are in some cases either similar or less than the multifamily shares of Fannie Mae's business. The multifamily share of Fannie Mae's business was 9.9 percent in 1999 (versus ICF's lower bound estimate for the market of 10.7 percent), 13.3 percent in 2000 (versus ICF's lower bound of 11.7 percent), and 10.9 percent in 2001 (versus ICF's lower bound market estimate of 9.0 percent). Even though these Fannie Mae data include both their seasoned and current-year purchases, it is surprising that ICF's market estimates would be similar or less than Fannie Mae's multifamily shares, given that Fannie Mae purchased practically no small (less-than-50-unit-property) multifamily loans during this period.

In its comments, Fannie Mae also provided various historical estimates of the MF mix

[15] The projection model for 2002 showed the following multifamily mixes for 2002: 11.1 percent for the HUD New multifamily estimate ($67.4 billion); 10.5 percent for the top end ($64 billion) of the Flow of Funds multifamily range ($60–64 billion), 10.3 percent for the mid-point ($62 billion), and 9.9 percent for the low end ($60 billion). In Sections F–H, HUD will consider multifamily mixes as low as 9.5 percent for 2002.

[16] For purposes of sensitivity analysis, the lower MF mixes were derived as follows: three percentage points were subtracted from the 1995–1997 mid-point MF mixes, which were in the high 18-to-21-percent range; two percentage points were subtracted from the 1998–2000 mid-point MF mixes, which were in the 14-to-17-percent range; and 1.5 percentage points were subtracted from the 2001–2002 mid-point MF mixes, which were less than 13 percent.

[17] HUD estimated ICF's MF mixes by including subprime loans in the data that ICF reported on pages 58–60 of its Appendix (for the Best Estimate) and on pages 63–65 of its Appendix (for the Lower Bound Estimate). To the extent that ICF also excluded other single-family loans (in addition to subprime SF loans), the estimates reported in the text overstate ICF's initial MF mixes.

(see its Appendix I, pages I–29 and I–30). First, without giving the details of its analysis, Fannie Mae asserts that ''Fannie Mae's analysis shows an average multifamily share of 10.2 percent for the 1997–2002 period, compared with HUD's 14 to 15 percent range'' (page I–30). Fannie Mae's estimate of 10.2-percent is below ICF's Best Estimate (12.1 percent), HUD's lower MF mix estimate (13.1 percent), and HUD's mid-point MF mix estimate (15.2 percent). (See Table D.5b.) Fannie Mae's estimate of 10.2 percent is practically the same as ICF's Lower Bound Estimate, which averaged 10.4 percent between 1997 and 2002; of course, this raises the same issue mentioned above with respect to ICF's Lower Bound Estimates.

Fannie Mae also provided various estimates of UPB per unit (see above) and applied its ''Low UPB per Unit Assumption'' and its ''High UPB per Unit Assumption'' to HUD's likely range of MF mortgage originations (as reported in column 11 of Table D.4). For the period 1997–2002, Fannie Mae obtained: (A) a range of 12.7–13.8 percent using its ''Low UPB per Unit Assumption'' and (B) a range of 10.5–11.5 percent using its ''High UPB per Unit Assumption.'' (See Fannie Mae's Table I.6 on page I–30.) Fannie Mae's (A) results are similar to HUD's lower MF mix estimates, which averaged 13.1 percent over the 1997–2002 period; its (B) results are slightly higher than ICF's Lower Bound Estimates, which averaged 10.4 percent over the 1997–2002 period.

Finally, Fannie Mae notes that its baseline analysis shows that the multifamily share dropped to 5.6 percent in 2003 and that HUD's MF assumptions (*e.g.*, 13.5 percent) clearly overstate typical multifamily shares and therefore the likely market opportunity for the GSEs (page I–30). HUD recognizes that the MF mix will be lower during heavy refinance years such as 2003, making it more difficult for the GSEs to achieve the housing goals; HUD's Advance Notice of Proposed Rulemaking (described in the Preamble) seeks proposals on how to treat heavy refinance years in the goals determination process. The range of MF mixes (13.5–15.0–16.0 percent) in HUD's projection model apply to a home purchase environment, not a heavy refinance environment.

As discussed in Section C.8 below, HUD will continue to use a 15 percent MF Mix as its baseline. In their comments on the proposed rule, both Fannie Mae and Freddie Mac expressed the view that HUD's 15 percent baseline estimate of the multifamily share of the conventional mortgage market was too high. As described earlier in this section, those organizations argued that HUD's estimates of multifamily loan originations were too high, that HUD's

estimates of multifamily UPB/unit were too low, and that these two errors together combined to produce an estimate multifamily market share that was one to four percentage points too high. A trade organization reached similar conclusions in their comments on the multifamily mix.

The Department has carefully considered these comments and the analysis supporting them. But HUD's conclusion is that the 15.0-percent baseline multifamily mix appropriately reflected the estimates and analysis appearing in the May 2004 Proposed Rule. The Department's responses to critiques of the individual components of the multifamily mix calculation appear earlier in this section. In addition, the Department's confidence that a 15 percent estimate for multifamily's share of conventionally financed is not too high is bolstered by data from the newly released 2001 Residential Finance Survey (RFS). As discussed in the next section, the RFS indicates a long-run market share for multifamily that is considerably higher than 15 percent. After presenting the RFS results, Section C.8 will return to the discussion of the baseline MF mix used in HUD's projection model.

7. Evidence on the Multifamily Mix from the 2001 Residential Finance Survey

Subsequent to the Department issuing the proposed rule in May, 2004, the Census Bureau released the 2001 Residential Finance Survey (RFS). The RFS provides new information on the size and composition of the residential mortgage market. As noted by Fannie Mae, Freddie Mac, and other organizations commenting on the draft rule, the RFS is an important and unique data source of data, because it is designed to provide comprehensive, nationally representative estimates on the volume and characteristics of single-family and multifamily mortgage loans and the properties they finance. Some organizations urged that the Rule not be finalized until data from the RFS has been analyzed.

The RFS data suggest a mortgage market somewhat different in size and composition from that estimated by most analysts based on partial data. Beginning with multifamily lending, the multifamily mortgage market is considerably larger than most analysts have thought, according to the RFS. For example, the RFS estimate of total mortgage debt outstanding on properties with five of more housing units is $608 billion dollars. The only other comprehensive estimate comes from the Federal Reserve Board's ''Flow of Funds'' accounts, which draw on data from multiple sources and on judgments by the Fed staff. The Flow of Funds estimate of multifamily debt outstanding as of 2002Q2 (the quarter most comparable to reporting

dates of RFS respondents) was only $457 billion. In other words, the RFS estimates a stock of multifamily mortgage debt 32 percent larger than Federal Reserve.

As with debt outstanding, multifamily loan originations in the RFS exceed most other estimates. Over the period 1998–2001, annual originations averaged $66 billion according to the RFS, and conventional originations (total less FHA insured) averaged $61 billion. HUD's estimates of conventional multifamily originations for these years, as summarized in Table D.2 of the proposed rule, averaged only $56 billion. In commenting on the proposed rule, Fannie Mae and Freddie Mac offered estimates of market size considerably below these.[18]

The single-family mortgage estimates from the 2001 RFS, like the multifamily estimates, are at odds with those from some other sources. For example, total mortgage debt on 1-to-4 family residences, according to the RFS, was $5.032 trillion, whereas the Flow of Funds estimate for 2002Q1 was a much higher $6.546 billion.

In summary, the RFS estimates a somewhat smaller residential mortgage market than the Flow of Funds—19 percent smaller as measured by total debt outstanding. Furthermore, multifamily debt is a much larger part of the total residential market in the RFS than in the Flow of Funds.

The RFS also records the number of housing units at each surveyed property, providing an opportunity to measure directly the number of housing units financed instead of relying on indirect methods. The RFS estimates indicate that, as with debt outstanding, the mix of mortgage lending by the measure of units financed is more heavily multifamily than previously thought. This is shown in Table D.5c, where units financed are presented for the loan origination years 2000 and 2001. These are the years for which the estimates are least likely to be biased by refinancing between the loan origination date and the survey. The estimates for 2001 are incomplete, because approximately 10 percent of the survey respondents reported as of dates prior to December 31, 2001 and loans subsequently originated on those properties would not be included. This undercount should affect single-family and multifamily reporting about proportionally, with little effect on the market share calculations.

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[18] The multifamily origination data in this paragraph reflect a recent release of the RFS; other single-family and multifamily data in this section draw from an earlier version of the RFS. HUD will continue its analysis of the RFS data as new versions are released by the Census Bureau.

Table D.5c

2001 Residential Finance Survey Estimates
Housing Units with a Newly Originated Mortgage, by Origination Year, Property Type, and Mortgage Type
(Units in Millions)

	Number of Housing Units Finance in:	
Multifamily (5+ Units) Financed		
A. By a 1st, 2nd, or 3rd mortgage	1.196	1.647
B. By any first mortgage	1.029	1.357
C. By a Conventional First mortgage	0.925	1.178
Single-Family (1-4 Units) Financed		
D. By a 1st, 2nd, or 3rd mortgage	6.494	6.517
E. By any first mortgage	5.694	5.195
F. By a Conventional First mortgage		
Below the Conforming Loan Limit	3.775	3.458
Market Share Calculations	Share in 2001	Share in 2002
G. Multifamily Share of Conventional		
Conforming Market (C / [C + F])	0.197	0.254

Source: HUD calculations from the July 26 release of the 2001 Residential
Finance Survey, as downloaded from the HudUser website; conventional
loan status identified from RFS variable "MTGINSR1"; conforming loan limit
set by year and property size.

Notes: In rows A and D, housing units with more than one type of mortgage
originated in a year will be counted more than once. Figures in the table do not
include draws against home equity lines of credit.

By the housing goals' metric of number of conventionally financed, conforming housing units, the 2001 Residential Finance Survey indicates a multifamily market share substantially above the pre-RFS estimates of HUD and GSEs. As detailed in Table D.5b, the multifamily share estimated for 2001 is 0.197, or 19.7%, and the share for 2000 is a striking 0.254, or 25.4%. These high figures are particularly noteworthy because the year 2001 was marked by high levels of refinancings, which have been viewed as boosting single-family lending proportionally more than multifamily. HUD's estimate of the multifamily share for 2000, for example, was only 13%–14%, as derived elsewhere in this rule.

There are several reasons for accepting the RFS estimates as an accurate portrayal of the residential mortgage market. First, the estimates are generated from a national representative sample of properties as drawn by experts at the U.S. Census Bureau. Second, the survey forms were designed in consultation with industry experts. Third, participation in the survey was mandatory, because it was conducted in conjunction with the 2000 Census. And fourth, data processing and editing at the Census Bureau prior to public release of census and survey results is meticulous.

Nonetheless, for the specific reasons noted, results from the RFS should be interpreted cautiously. First, loan originations for any year will be understated, because the RFS will record only those loans still outstanding as of the late 2001 or early 2002 survey date. Loans originated in, for example, 1998, will be recorded only if those loans have not been refinanced, repaid, or charged off prior to the RFS survey date. For this reason, the RFS unit count and especially the market share estimates for 2001 are more reliable than those for 2000 and earlier years. Second, some of the results of the RFS are substantially at odds with other evidence and industry perceptions, as noted already. Another example of a surprising RFS finding is the time path of multifamily loan originations. According to the RFS, originations were roughly 50 percent greater in 1998–1999 than in 2000–2001, whereas most other evidence points to originations in 2000–2001 that at least equaled, and likely exceeded, the volume of 1998–1999.

Lastly, in response to user feedback and its own data checks, the Census Bureau has revised the RFS estimates three times since the initial data release in early July 2004. The possibility remains that additional errors will be found and that the resulting revisions to the data will significantly change the RFS portrayal of the multifamily mortgage market. HUD will continue its analysis of the RFS as new versions are released.

On balance, the Department views the RFS as providing strong additional evidence that the Department's baseline multifamily mix percentage of 15% is not an overestimate. The RFS data, weighed alone, would have that percentage set much higher.

8. Multifamily Mix in HUD's Model—Further Discussion

As noted above, the "multifamily mix" is the number of multifamily units financed each year as a *percentage share* of the total (both single-family and multifamily) number of dwelling units financed each year. Because of the high goals-qualifying shares of multifamily housing, the multifamily mix is an important parameter in HUD's projection model for the overall market; other things equal, a higher multifamily mix (or conversely, a lower share of single-family loans) leads to a higher estimate of goals-qualifying loans in the overall mortgage market.

The multifamily share of the conforming conventional market (or "multifamily mix") is utilized below as part of HUD's analysis of the share of units financed each year meeting each of the housing goals. The proposed rule considered multifamily mixes of 13.5 percent, 15.0 percent, and 16.5 percent, as well as even lower multifamily mixes for heavy refinance environments such as 2001–03. The 15.0 percent level was considered as the baseline based on analysis of multifamily shares during home purchase environments of the 1990s. In the market sections below, HUD continues to focus on the baseline 15.0 percent but also considers a range of estimates, including those provided by commenters on the proposed rule. Comments by Fannie Mae and ICF are summarized below.

In its projection model, Fannie Mae uses a multifamily mix of 12.3 percent (see Table 1.6 on page 11). As noted in Section C.6 above, Fannie Mae estimated an average multifamily mix of only 10.2 percent over the 1997–2002 period. Fannie Mae notes that HUD's 13.5–16.5 range is "well above the range of estimates suggested by an examination of all available data and is inconsistent with the current weak fundamentals in the multifamily market." (Fannie Mae, p. 15) Fannie Mae's views about the future mortgage market were discussed on pages I–14 to I–17 in its Appendix I ("Comments on HUD's Analysis of the Statutory Factors") to its comments. As discussed earlier, Fannie Mae's somewhat pessimistic views about the future market were driven by the current high vacancy rates for multifamily properties and the fact that the high-renter age group (the so-called "echo boom" aged 20–34) will not begin to increase until after 2007. Fannie Mae also emphasized that the recent spike in multifamily originations (beginning in 2001) means that a large portion of today's holders of multifamily mortgages have already refinanced and therefore will have only limited ability and incentive to refinance over the next several years, due to yield maintenance provisions on their existing multifamily mortgages. According to Fannie Mae, these loans will not begin to exit their yield maintenance periods until sometime between 2008 and 2010, with the result being that the 2005–2008 period appears to have relatively limited prospects for multifamily refinancing. Fannie Mae notes that single-family lending is not subject to these constraints and is more likely to undergo modest refinance waves as a result of interest rate fluctuations. Based on its analysis, Fannie Mae concludes that a multifamily share of 12.3 percent is "consistent with reasonable estimates" of the multifamily market (Fannie Mae Appendix, Table I.15, p. I–42).

Based on its analysis of the multifamily market, ICF, Freddie Mac's contractor, offered higher projections of the MF mix. Specifically, ICF provided the following estimates of the multifamily mix during the projection period, 2005–08, as follows:

	ICF MF Mix (percent)
2005	13.7
2006	14.5
2007	14.7
2008	13.9
average	14.2

Thus, ICF's 14.2-percent average estimate is a little less than HUD's baseline (15.0 percent), standing at the mid-point of HUD's 13.5 and 15.0 figures. For a discussion of ICF's methodology for estimating the multifamily mix, and their actual use of their estimated multifamily mixes in projecting overall market estimates for the three housing goal categories, see pages 126–140 of their technical appendix, entitled "Analysis of the Proportion of the Mortgage Market that Meets the GSEs'' Affordable Housing Goals: Issues of Variability and Uncertainty: Technical Appendix" (July 15, 2004). According to ICF, they projected the number of multifamily (MF) units based on the existing number of units likely to be refinanced (rollover) and the expected number of MF units that would be added to the housing stock (new completions). The amount of rollover was estimated as the average of the number of units financed 8, 9, and 10 years ago. ICF used these time periods because 10-year balloon mortgages are the most common MF mortgages, and MF loans typically include a yield maintenance period to limit prepayments.[19] In their basic report, they state that they view the above estimates from their MF projection model as "our core, or our most likely forecast for 2005 through 2008" (ICF Report, p. 40). While they state that "our [ICF] multifamily projections for 2005 through 2008 have a sound empirical basis owing to the nature of multifamily mortgages and new multifamily construction," ICF also reminds readers of the uncertainty of its MF projections when it states "while we believe the core range is the best and most likely estimate of the future market, we [ICF] recognize that it is possible that the actual outcomes may be outside this range, either higher or lower" (ICF Report, p. 40). The ICF basic report is entitled "Analysis of the Proportion of the Mortgage Market that Meets the GSEs'' Affordable Housing Goals: Issues of Variability and Uncertainty: Technical Appendix" (July 15, 2004). Because the basic report and the appendix are paginated differently, they will be referenced separately—ICF's basic report will be referred to as the "ICF Report", while their appendix will be referred to as the "ICF Appendix".

As discussed earlier, the 2001 RFS provides higher estimates of the MF mix for

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[19] Estimates of new MF units were created by comparing the historical estimates of numbers of units added by HUD and REIS, creating a ratio, and then applying that ratio to the REIS' future projections.

1999–2001 than either Fannie Mae or ICF. The RFS data suggest that 15.0 percent is a reasonable baseline, particularly for a home purchase environment. Thus, the market analysis of the housing goals in Sections F–H will continue to use 15.0 percent as the baseline MF mix. To reflect the uncertainty with the MF data, market projections will also be provided for alternative MF mixes of 12.25 percent (approximating Fannie Mae's projection of 12.3 percent), 13.5 percent (the low-end projection for a home purchase environment used in HUD's 2004 proposed rule), 14.25 percent (approximating the 12.2 percent average of ICF's best projections of MF mixes between 2005 and 2008), and 16.0 percent (a half percentage point below the high-end projection for a home purchase environment used in HUD's 2004 proposed rule). Based on ICF's best projection and HUD's analysis of the 2001 RFS, the bottom end of the range probably should not go below 13.5 percent for a home purchase environment. However, results are provided for the 12.25 percent in order to show the sensitivity of the market sizing to the assumption made by Fannie Mae in its analysis. Of course, it is recognized that the multifamily mix will be significantly lower during heavy refinancing periods such as 2001–2003. Therefore, additional sensitivity analyses will be conducted to show the effects of even lower multifamily mixes. But as explained in the Preamble of this Final Rule, in its goals scoring, HUD will reduce refinance loans so they account for not more than 40 percent of combined home purchase and refinance loans. This addresses the problem of a low MF mix during a heavy refinancing period reducing the ability of the GSEs to meet the new goal targets.

D. Single-Family Owner and Rental Mortgage Market Shares

1. Available Data on Investor Share

As explained later, HUD's market model will also use projections of mortgage originations on single-family (1–4 unit) properties. Current mortgage origination data combine mortgage originations for the three different types of single-family properties: Owner-occupied, one-unit properties (SF-O); 2–4 unit rental properties (SF 2–4); and 1–4 unit rental properties owned by investors (SF-Investor). The fact that the goal percentages are much higher for the two rental categories argues strongly for disaggregating single-family mortgage originations by property type. This section discusses available data for estimating the relative size of the single-family rental mortgage market.

The Residential Finance Survey (RFS) and HMDA are the data sources for estimating the relative size of the single-family rental market. The 2001 RFS provides mortgage origination estimates for each of the three single-family property types, as it includes mortgages originated during 2001, as well as surviving mortgages that were originated in earlier years such as 1999 and 2000. HMDA divides newly-originated single-family mortgages into two property types:[20]

(1) Owner-occupied originations, which include both SF-O and SF 2–4.

(2) Non-owner-occupied mortgage originations, which include SF Investor.

The percentage distributions of single-family mortgages from HMDA and the 2001 RFS are provided in Table D.6a and D.6b. HMDA data will be discussed first. Because HMDA combines the first two categories (SF-O and SF 2–4), the comparisons between the data bases must necessarily focus on the SF investor category. The following points stand out from Table D.6.a:

• The investor share of all single-family loans has ranged from 5.7 percent (1993) to 9.1 percent (2000), with an average of 7.8 percent. Over the more recent 1999–2003 period, the investor share has averaged 8.3 percent.

• The investor share is much higher for home purchase loans than for refinance loans. The investor share of home purchase loans averaged 9.6 percent between 1993 and 2003, as compared with a 6.8 percent average for refinance loans.

• The investor share for home purchase loans recently increased, rising from slightly above 9.0 percent during 1999 to around 10.0 percent during 2000–2001 to 12.0–13.0 percent during 2002 and 2003. The average investor share for home purchase loans was 11.2 percent between 1999 and 2003.

• In its comments, Fannie Mae noted that HUD should deduct subprime loans from investor loans. As shown in the middle portion of Table D.6a, deducting investor subprime loans reduces the overall investor share by approximately one-half percentage point (*e.g.,* 1999–2003 average is reduced from 8.3 percent to 7.7 percent).[21]

• HMDA data for metropolitan areas (bottom portion of Table D.6.a) show a slightly lower investor share than HMDA data for both metropolitan and non-metropolitan areas (top portion of Table D.6a). Between 1993 and 2003, the investor share in metropolitan areas averaged 7.5 percent, as compared with 7.8 percent for the U.S. as a whole. During the more recent 1999–2003 period, the differential was slightly higher, 7.8 percent versus 8.3 percent.

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[20] The HMDA data reported in this section ignore HMDA loans with "non-applicable" for owner type.

[21] These data without subprime loans are presented merely to provide a sense of the likely changes if one excludes subprime investor loans. Three comments should be made about them. First, HUD's procedure is to drop one-half of subprime loans as a proxy for B&C loans, which one reduce the one-half percentage point differential mentioned in the text to a one-quarter point percentage differential. Second, the comparisons in Table D.6a do not deduct single-family owner subprime loans; doing that would raise the investor shares from those in middle portion of the table. Third, HUD's model starts with investor and owner property shares that include subprime loans (such as those in the top portion of Table D.6a) and then excludes the subprime loans as part of the derivations within the model. See Section F for an explanation of this procedure.

Table D.6a

Investor Loans as a Percentage of all Single-Family Loans,
HMDA Data, 1993-2003

	Home Purchase	Refinance	Total	Assumed Refinanced Rate of:		
				35%	40%	45%
1. All Investor Loans						
2003	13.4%	6.5%	8.2%	11.0%	10.7%	10.3%
2002	12.3%	6.5%	8.2%	10.2%	10.0%	9.7%
2001	10.6%	6.2%	7.8%	9.1%	8.9%	8.7%
2000	10.0%	7.6%	9.1%	9.2%	9.1%	8.9%
1999	9.4%	7.0%	8.2%	8.6%	8.5%	8.3%
1998	9.0%	5.5%	6.8%	7.8%	7.6%	7.4%
1997	9.4%	7.4%	8.4%	8.7%	8.6%	8.5%
1996	8.2%	6.9%	7.6%	7.7%	7.7%	7.6%
1995	8.4%	8.2%	8.3%	8.4%	8.3%	8.3%
1994	7.8%	8.3%	8.0%	8.0%	8.0%	8.0%
1993	6.9%	5.2%	5.7%	6.3%	6.2%	6.1%
1993-2003	9.6%	6.8%	7.8%	8.6%	8.5%	8.3%
1999-2003	11.1%	6.8%	8.3%	9.6%	9.4%	9.2%
2. Investor Loans						
Without Subprime Loans						
2003	12.7%	6.1%	7.7%	10.4%	10.1%	9.7%
2002	11.7%	6.0%	7.7%	9.7%	9.4%	9.2%
2001	10.1%	5.8%	7.3%	8.6%	8.4%	8.2%
2000	9.5%	6.3%	8.3%	8.4%	8.2%	8.1%
1999	8.9%	6.0%	7.4%	7.9%	7.8%	7.6%
1998	8.5%	4.8%	6.1%	7.2%	7.0%	6.8%
1997	8.9%	5.9%	7.5%	7.9%	7.7%	7.6%
1996	7.9%	6.2%	7.1%	7.3%	7.2%	7.1%
1995	8.3%	7.6%	8.0%	8.0%	8.0%	8.0%
1994	7.6%	8.0%	7.8%	7.7%	7.8%	7.8%
1993	6.8%	5.1%	5.6%	6.2%	6.1%	6.0%
1993-2003	9.2%	6.2%	7.3%	8.1%	8.0%	7.8%
1999-2003	10.6%	6.0%	7.7%	9.0%	8.8%	8.6%
3. Investor Loans in						
Metropolitan Areas						
2003	12.5%	6.1%	7.7%	10.3%	10.0%	9.6%
2002	11.4%	6.0%	7.7%	9.5%	9.3%	9.0%
2001	9.9%	5.9%	7.3%	8.5%	8.3%	8.1%
2000	9.3%	7.6%	8.7%	8.7%	8.6%	8.5%
1999	8.9%	6.9%	7.9%	8.2%	8.1%	8.0%
1998	8.5%	5.3%	6.5%	7.4%	7.2%	7.1%
1997	8.9%	7.3%	8.2%	8.4%	8.3%	8.2%
1996	7.7%	6.8%	7.3%	7.4%	7.4%	7.3%
1995	7.9%	8.0%	7.9%	7.9%	7.9%	7.9%
1994	7.3%	8.3%	7.7%	7.6%	7.7%	7.7%
1993	6.5%	5.0%	5.4%	6.0%	5.9%	5.8%
1993-2003	9.0%	6.7%	7.5%	8.2%	8.1%	7.9%
1999-2003	10.4%	6.5%	7.9%	9.0%	8.9%	8.6%

Table D.6b

Property Shares in Conventional Conforming Market

	Share of Single-Family Mortgages Originated in:					
	2001					
	Home Purchase	Refinance	Total	2000	1999	1998-2001
1. Single-Family Owner 1-Unit	82.7%	89.7%	85.1%	84.9%	85.9%	86.4%
2. Single-Family Owner 2-4 Unit	1.6%	1.3%	1.5%	1.1%	1.2%	1.1%
3. Single-Family Investor	15.7%	9.0%	13.4%	14.0%	13.0%	12.4%
4. All Single-Family	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

	Share of Single-Family Units Financed in (Year):			
	2001	2000	1999	1998-2001
1. Single-Family Owner 1-Unit	80.2%	81.1%	82.3%	82.8%
2. Single-Family Owner 2-4 Unit	3.0%	2.3%	2.5%	2.4%
3. Single-Family Investor	16.8%	16.6%	15.2%	14.9%
4. All Single-Family	100.0%	100.0%	100.0%	100.0%

	Overall Distribution of Dwelling Units Financed in (Year):			
	2001	2000	1999	1998-2001
1. Single-Family Owner 1-Unit	67.0%	64.4%	68.1%	67.4%
2. Single-Family Owner 2-4 Unit	2.5%	1.8%	2.1%	1.9%
3. Single-Family Investor	14.0%	13.2%	12.6%	12.1%
4. All Single-Family	83.5%	79.4%	82.8%	81.4%
5. Multi-Family	16.5%	20.6%	17.2%	18.6%
6. All Dwellings	100.0%	100.0%	100.0%	100.0%

Source: 2001 Residential Finance Survey. 1998, 1999, and 2000 data are the mortgages originated in those years that were surviving at the time of the RFS interview in 2001. Therefore, because they do not include mortgages that had prepaid by 2001, they are not necessarily representative of the mortgages originated in those years. This is likely a more serious problem for the out years 1999 and 1998, as compared with 2000.

Table D.6b provides information on investor loans from the 2001 RFS. During 2001, investors accounted for 13.4 percent of all new single-family mortgages. Similar to the pattern in HMDA, the RFS-reported investor share of home purchase loans (15.7 percent) was higher than the investor share (9.0 percent) of refinance loans (see Table D.6b). The RFS-based investor shares were similar for single-family mortgages originated in earlier years that had also survived (*i.e.,* not prepaid) until the time of the RFS survey in 2001; for example, the investor share was 13.0 percent for surviving 1999 mortgages and 14.0 percent for surviving year 2000 mortgages.

For comparison purposes, Table D.6c provides investor shares of the single-family mortgages purchased by the GSEs. Between 1999 and 2003, the investor share of Fannie Mae's single-family mortgage purchases ranged from 4.2 percent (1999) to 7.8 percent (2000). Freddie Mac's investor share has been lower, ranging from 3.0 percent (2003) to 4.8 percent (2000). The low figure for 2003 was due to the heavy refinancing of owner loans in that year.

Table D. 6c

**Percentage Distribution Across Single-Family Property Types
of Single-Family Mortgages Purchased by
Fannie Mae and Freddie Mac, 1999-2003**

	Single-Family Owner 1-Unit Share of All SF Mortgages Purchased	Single-Family Owner 2-4 Unit Share of All SF Mortgages Purchased	Investor Share of All SF Mortgages Purchased	All Single-Family Mortgages	Exhibit: Investor Share of All Dwelling Units Financed	Exhibit: Single-Family 2-4 Units Per Mortgage	Exhibit: Single-Family Investor Units Per Mortgage
Fannie Mae							
1999	94.0%	1.8%	4.2%	100.0%	5.4%		
2000	90.2%	2.0%	7.8%	100.0%	10.0%		
2001	92.5%	2.0%	5.5%	100.0%	7.3%		
2002	91.8%	1.9%	6.2%	100.0%	8.4%	2.26	1.38
2003	92.7%	1.9%	5.4%	100.0%	7.2%	2.27	1.38
Freddie Mac							
1999	94.7%	1.5%	3.8%	100.0%	4.8%		
2000	93.6%	1.6%	4.8%	100.0%	6.1%		
2001	94.3%	1.5%	4.2%	100.0%	5.6%		
2002	94.4%	1.6%	3.8%	100.0%	5.1%	2.26	1.36
2003	95.5%	1.4%	3.0%	100.0%	4.0%	2.25	1.36

Source: Data that GSE submit to HUD.

The RFS investor share of 13.4 percent in 2001 is substantially larger than the corresponding HMDA investor share of 7.8 percent. In their comments on the 2004 proposed rule, as well as in their comments on HUD's earlier 1995 and 2000 GSE rules, the GSEs have argued that HUD should use the HMDA-reported SF investor share. In its 1995 and 2000 rules and the 2004 proposed GSE rule, HUD's baseline model assumed a 10 percent share for the SF investor group— only slightly higher than the HMDA-based estimates; alternative models assuming 8 percent and 12 percent were also considered. At that time, HUD argued that its baseline projection of 10 percent was probably quite conservative; however, given the uncertainty around the data, it was difficult to draw firm conclusions about the size of the single-family investor market, which necessitated that HUD conduct sensitivity analyses using investor shares (*e.g.*, 8 percent) less than 10 percent. HUD's argument that its 10 percent baseline work was probably conservative was based on earlier work by Blackley and Follain. It is interesting to briefly review their work because they focused on the differences between RFS and HMDA data.

2. Blackley and Follain Analysis of Investor Market Share

As mentioned, during the 1995 rule-making, HUD asked the Urban Institute to analyze the differences between the RFS and HMDA investor shares and determine which was the more reasonable. The Urban Institute's analysis of this issue is contained in reports by Dixie Blackley and James Follain.[22] Blackley and Follain provide reasons why HMDA should be adjusted upward as well as reasons why the RFS should be adjusted downward. They find that HMDA may understate the investor share of single-family mortgages because of ''hidden investors'' who falsely claim that a property is owner-occupied in order to more easily obtain mortgage financing. RFS may overstate the investor share of the market because units that are temporarily rented while the owner seeks another buyer may be counted as rental units in the RFS, even though rental status of such units may only be temporary. The RFS's investor share should be adjusted downward in part because the RFS assigns all vacant properties to the rental group, but some of these are likely intended for the owner market, especially among one-unit properties. Blackley and Follain's analysis of this issue suggests lowering the investor share from the 1991 RFS-reported investor share of 17.3 percent to about 14–15 percent.

Finally, Blackley and Follain note that a conservative estimate of the SF investor share is advisable because of the difficulty of measuring the magnitudes of the various effects that they analyzed. In their 1996

paper, they conclude that 12 percent is a reasonable estimate of the investor share of single-family mortgage originations.[23] Blackley and Follain caution that uncertainty exists around this estimate because of inadequate data.

3. GSE Comments on SF Rental Shares in the Proposed Rule

Fannie Mae, Freddie Mac, and ICF thought that the investor share should be lower than the 10 percent used by HUD. While they agreed with HUD that the RFS provided the most accurate estimate of the true investor share of the market, they emphasized that lender reporting of investor loans to the GSEs was best proxied by HMDA data (which, of course, are based on lender reports). That is, the actual opportunities available to the GSEs in the SF investor market are best measured by data that lenders report based on information from actual loan applications. Based on this argument, they concluded that HUD's market sizing analysis should rely on HMDA data, not RFS data.

For example, Fannie Mae argued that the most valid measure of the single-family rental market is the same measure (lender-reported data to HMDA) against which the GSEs' performance is measured. Fannie Mae points out that that two (10 percent and 12 percent) of the three scenarios that HUD uses exceed the highest investor share ever reported in HMDA. Fannie rejects HUD's justification (the 1991 RFS and the Blackley-Follain analysis) for using the higher scenarios because the lender reporting to the GSEs is closer to HMDA data than to the reporting in the RFS. Fannie Mae argues that the 1995 Blackley and Follain analysis bolsters its case against the RFS measures. Fannie Mae notes that both HUD and Blackley and Follain conclude that there is a reporting bias in the HMDA data that is not present in the RFS. The bias is in part due to hidden investors. At the time of origination, the property may be owner-occupied or may be intended to be owner-occupied. In fact, the property may become rental shortly after origination. As a result, the RFS reports a more accurate higher percentage of rental housing because it is a snapshot of housing, not a collection of information at mortgage origination. Fannie Mae says HUD uses the RFS because it is the more accurate measure of the rental market at any moment in time. However, Fannie Mae argues that the same bias in HMDA also exists in its own reporting when it acquires mortgages. According to Fannie Mae, an apples to apples comparison would make sure that the GSE goals contain the same biases that the GSE reports contain, rather than no bias. Finally, Fannie says that even HMDA overstates the investor share of the single-family market because of second homes. Second homes are reported in HMDA as ''not owner occupied'' to determine investor status but are not goals eligible. Therefore, according to Fannie Mae, HUD's use of HMDA would overestimate the goals-eligible share of the single-family market. As a result of these data and methodology issues, Fannie believes HUD miscalculates

the mix of units in the rental market and overstates the size of the goals-eligible portion of the rental market.

Similarly, Freddie Mac concluded that HUD overestimated the SF investor share of the market because it relied on the RFS rather than HMDA. Freddie Mac says investor-owners have an incentive to claim falsely they are owner-occupants because of higher underwriting standards and higher interest rates on investor-owner properties. According to Freddie Mac, these incentives likely result in HMDA's undercounting SF investor loans relative to the more accurate counts of investor loans from the RFS. Freddie Mac concludes as follows:

This undercounting [on the part of HMDA], however, is exactly what is desired when estimating the goal share available to the GSEs. Because the GSEs' information on their loans has the same ''bias'' as does the HMDA data. * * * The HMDA data, therefore, are more appropriate to estimating the market for goal setting than are the RFS data. (p.II–6)

Essentially, Freddie Mac concludes that HUD's market estimates should measure opportunities in the marketplace that are actually available to the GSEs. Such opportunities are best measured by lender-reported HMDA data, not the more accurate RFS data. ICF reaches a similar conclusion, as it states that ''HMDA data, or its equivalent, are what the GSEs' performance will be measured against and is therefore the appropriate metric for estimating market goal shares'' (ICF Report, p.20).

4. SF Investor Shares in the Final Rule

In this final Rule, HUD has switched to a HMDA-based system and provides overall market share estimates for a range of single-family investor shares. For each year between 1993 and 2003, the top-right-hand-side portion of Table D.6a shows the projected investor share in a ''home purchase environment'' assuming a refinance share of 35 percent, 40 percent, and 45 percent. Refinance shares greater than 35 percent are included here because single-family investor loans typically have higher refinance shares than single-family-owner loans. As shown in Table D.6a, the average 1993–2003, HMDA-based investor share would have been 8.5 (8.4) percent if the investor refinance share had been 40 (45) percent during this period. During the more recent 1999–2003 period, which was characterized by particularly high HMDA-reported investor shares for home purchase loans, the average investor share would have been 9.4 (9.2) percent if the investor refinance share had been 40 (45) percent during this period. As noted earlier, the HMDA-reported investor shares for metropolitan areas are slightly lower than those for the entire U.S. As shown in the bottom-right-hand portion of Table D.6a, the average 1999–2003, HMDA-based investor share for metropolitan areas would have been 8.9 (8.7) percent if the investor refinance share had been 40 (45) percent during this period.

The above analysis suggests that the HMDA-reported investor share of a future home purchase market will probably be around 8.5–9.0 percent, or possibly higher if the recent figures for home purchase loans hold up (in this case, around 9.5 percent).

[22] Dixie M. Blackley and James R. Follain, ''A Critique of the Methodology Used to Determine Affordable Housing Goals for the Government Sponsored Housing Enterprises,'' report prepared for Office of Policy Development and Research, Department of Housing and Urban Development, October 1995; and ''HUD's Market Share Methodology and its Housing Goals for the Government Sponsored Housing Enterprises,'' unpublished paper, March 1996.

[23] Blackley and Follain (1996), p. 20.

Thus, HUD's analysis of market shares in Sections F–H will report overall market estimates for a range of SF investor shares— 8.0 percent, 8.5 percent, 9.0 percent, and 10.5 percent.

5. Single-Family Market in Terms of Unit Shares

The market share estimates for the housing goals need to be expressed as percentages of *units* rather than as percentages of mortgages. Since a SF 2–4 and a SF-investor mortgage finances more than one dwelling unit, adjustments reflecting units-per-mortgage have to be made in order to arrive at the distribution of newly-financed single-family dwelling units. From HMDA, one can obtain the share of investor mortgages (those reported in Table D.6a) and the share of owner mortgages (obtained by subtracting the share of investor mortgages from 100 percent). HMDA does not disaggregate the SF-owner (SF–O) mortgage category into its two components: SF–O 1-Unit mortgages and SF–O 2–4 mortgages. To arrive at shares of SF financed dwelling units, two sets of adjustments have to be made to the HMDA data.

First, the owner-occupied HMDA data have to be disaggregated between SF–O 1-Unit and SF 2–4 mortgages. HUD's 2004 proposed GSE rule assumed that SF 2–4 mortgages accounted for 2.0 percent of all single-family mortgages. Based on the 2001 RFS data, this percentage is reduced to about 1.6 percent in this Final Rule. In 2001, the RFS shows the following distribution across the three single-family mortgage types: (a) 85.1 percent for SF–O 1-Unit mortgages; (b) 1.5 percent for SF–O 2–4 mortgages; and (c) 13.4 percent for SF-Investor mortgages (see Table D.6b). Thus, according to 2001 RFS data, SF 2–4 mortgages represent 1.73 percent of all single-family-owner mortgages (obtained by dividing (b) by the sum of (a) and (b)). In the market projection models, the SF-investor mortgage share is assumed to be lower than the RFS-reported figure of 13.4 percent. If the SF-investor share is 8.5 percent, then the SF–O share is 91.5 percent, which is split as follows: 1.58 percent for SF–O 2–4 mortgages (obtained by multiplying 0.0173 by 91.5 percent) and 89.92 percent for SF–O 1-Unit mortgages (obtained by subtracting 1.58 percent for the overall SF–O share of 91.5 percent). Thus, in this scenario, the distribution across SF mortgage types would be as follows: (d) 89.92 percent for SF–O 1-Unit mortgages; (b) 1.58 percent for SF–O 2–4 mortgages; and (c) 8.50 percent for SF-Investor mortgages. Table D.6d shows the distribution of SF mortgages under the various assumptions assumed in Sections F–H. For comparison purposes, the SF–O 2–4 shares for the GSEs are reported in Table D.6c. The 1999 to 2003 shares for Fannie Mae are approximately 2.0 percent while those for Freddie Mac are approximately 1.5 percent. Thus, the Fannie Mae shares are consistent with the 2.0 percent assumption used in the 2004 proposed rule while the Freddie Mac shares are consistent with the 1.6 percent assumption used in this Final Rule. Sensitivity analyses in Sections F–G will show the effects of using the 2.0 percent assumption (as compared with the 1.6 percent baseline).

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Table D.6d

Percentage Distribution Across Property Types of Single-Family Mortgages for Given Assumptions About the Mortgage Investor Share

Mortgage Investor Share	(1) Single-Family 1-Unit Share of Mortgages	(2) Single-Family 2-4 Unit Share of Mortgages	(3) Single-Family Investor Share of Mortgages (by assumption)	(4) All Single-Family Mortgages
8.0	90.41	1.59	8.00	100.00
8.5	89.92	1.58	8.50	100.00
9.0	89.42	1.58	9.00	100.00
9.5	88.93	1.57	9.50	100.00

Note: See text for explanation.

Second, the resulting mortgage-based distributions have to be shifted to unit-based distributions by applying the unit-per-mortgage assumptions. The 2004 proposed GSE rule assumed the following: 2.25 units per SF 2–4 property and 1.35 units per SF investor property. Based on RFS data, these numbers are reduced slightly to the following: 2.2 units per SF 2–4 property and 1.3 units per SF investor property. These figures are based on 1999–2001 averages from the RFS. The corresponding 2001 figures from the RFS were 2.1 and 1.4, respectively. As shown in Table D.6d, the GSE data has consistently been around the figures in the 2004 proposed GSE rule, which were 2.25 and 1.35, respectively. Thus, it was decided to use the 1999–01 RFS averages which drop each units-per-mortgage figure by 0.05. Sensitivity analysis shows that this issue (whether to use the 1999–01 combination of 2.2/1.3 or to use the 2001 combination of 2.1/ 1.4) has little impact on the market sizing results.

Based on these calculations, the percentage distribution of newly-mortgaged single-family dwelling *units* was derived for each of the various estimates of the investor share of single-family mortgages. The results are presented in Table D.6e for investor percentage shares of 8.0, 8.5, 9.0, and 9.5. Three points should be made about these data.

Table D.6e

Percentage Distribution Across Property Types of Financed Single-Family Dwelling Units for Given Assumptions about the Mortgage Investor Share

	(1) Single-Family 1-Unit Owners	(2) Single-Family 2-4 Unit		(3) Single-Family Investor	(4) Total	(5) Exhibit: All Single-Family Owner Units	(6) Exhibit: All Single-Family Rental Units
		Owner	Rental				
8.0	88.67	1.53	1.83	9.97	100.00	88.20	11.80
8.5	88.08	1.52	1.82	10.58	100.00	87.60	12.40
9.0	85.50	1.51	1.81	11.19	100.00	82.01	12.99
9.5	84.92	1.50	1.80	11.79	100.00	86.41	13.59

First, notice that the rental categories represent a larger share of the unit-based market than they did of the mortgage-based market reported earlier. For example, when the SF-investor category represents 8.5 percent of all SF mortgages, it represents 10.6 percent of all SF units financed. This, of course, follows directly from applying the loan-per-unit expansion factors.

Second, notice that the "All SF-Rental Units" column highlights the share of the single-family mortgage market accounted for by all single-family rental units, for both SF–O 2–4 properties and SF-Investor properties. For example, when the investor mortgage share is 8.5 percent, single-family rental units (in SF 2–4 properties as well as in SF investor properties) account for 12.4 percent of all newly-mortgaged SF units. This single-family rental share compares with 15.1 percent under the baseline assumptions of the 2004 proposed GSE Rule; the 15.1 percent figure is reported in Table D.6b of the

2004 proposed GSE rule. If the single-family investor share is 9.0 (9.5) percent, then single-family rental units account for account for 13.0 (13.6) percent of all newly-mortgaged SF units.

ICF projected that SF rental units would account for 12.0 percent of all single-family-financed units during the 2005–2008 projection period (ICF Appendix, p.126). Under the units-per-mortgage and SF–O 2–4 share assumptions that ICF was using (2.25 for SF–O 2–4 and 1.35 for SF–Investor and a 2.0 percent share for SF–O 2–4 mortgages), ICF's 12-percent assumption for single-family rental units translates back to an investor mortgage share of 7.5 percent.[24]

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[24] It should be mentioned that ICF's 12.0 percent assumption for the SF rental share seems at odds with ICF's Exhibit 6.4, which suggests that ICF's 1994–2002 average SF rental share is 14.9 percent. A 14.9 percent SF rental share would be consistent with a 12 percent investor mortgage share.

In its projections, Fannie Mae assumes 8.0 percent for the investor share of mortgages, a figure Fannie Mae says is consistent with HMDA data (Fannie Mae Appendix I, Table 1.11, p. I–38). Under the 2001 RFS assumptions (see above), this translates into a single-family rental share (on a units basis) of 11.8 percent. Under the units-per-loan and SF–O 2–4 assumptions of the proposed rule, this translates into a single-family rental share (expressed on a units basis) of 12.7 percent.

Third, if the investor mortgage share were 13 percent (the 2001 figure from the RFS), single-family rental units would account for over 17 percent of all newly-mortgaged single-family units.

The unit distributions reported for the GSEs in Table D.6f will be discussed in the next section.

Table D.6f

Single-Family Owner, Single-Family Rental, and Multifamily Rental Shares of the GSEs' Purchases

| | **Fannie Mae** | | | | |
	Single-Family Owner	Single-Family Rental	Multifamily Rental	Total	Exhibit: Total Rental
1999	83.3%	6.8%	9.9%	100.0%	16.7%
2000	75.9%	10.8%	13.3%	100.0%	24.1%
2001	80.5%	8.6%	10.9%	100.0%	19.5%
2002	82.4%	9.9%	7.7%	100.0%	17.6%
2003	82.9%	8.7%	8.4%	100.0%	17.1%
Unweighted Averages					
1999-2002	80.5%	9.0%	10.5%	100.0%	19.5%
1999-2003	81.0%	9.0%	10.0%	100.0%	19.0%
	Freddie Mac				
	Single-Family Owner	Single-Family Rental	Multifamily Rental	Total	Exhibit: Total Rental
1999	85.4%	6.1%	8.5%	100.0%	14.6%
2000	82.5%	7.2%	10.3%	100.0%	17.5%
2001	83.8%	6.7%	9.5%	100.0%	16.2%
2002	85.7%	6.6%	7.7%	100.0%	14.3%
2003	84.2%	5.1%	10.7%	100.0%	15.8%
Unweighted Averages					
1999-2002	84.4%	6.7%	9.0%	100.0%	15.7%
1999-2003	84.3%	6.3%	9.3%	100.0%	15.7%

Note: Single-family rental dwelling units accounted for 6.8% of all dwelling units (owner and rental) financed by
Fannie Mae in 1999. Thus, there are unit-based (not mortgage-based) distributions.

E. HUD's Market Share Model

This section integrates findings from the previous two sections about the size of the multifamily mortgage market and the relative distribution of single-family owner and rental mortgages into a single model of the mortgage market. The section provides the basic equations for HUD's market share model and identifies the remaining parameters that must be estimated.

The output of this section is a unit-based distribution for the four property types discussed in Section B.[25] Sections F–H will apply goal percentages to this property distribution in order to determine the size of the mortgage market for each of the three housing goals.

1. Basic Equations for Determining Units Financed in the Mortgage Market

The model first estimates the number of dwelling units financed by conventional conforming mortgage originations for each of the four property types. It then determines each property type's share of the total number of dwelling units financed.

a. Single-Family Units

This section estimates the number of single-family units that will be financed in the conventional conforming market, where single-family units (SF–UNITS) are defined as:

SF–UNITS = SF–O + SF 2–4 + SF–INVESTOR

First, the dollar volume of conventional conforming single-family mortgages (CCSFM$) is derived as follows:

(1) CCSFM$ = CONV% * CONF% * SFORIG$

where

CONV% = conventional mortgage originations as a percent of total mortgage originations; estimated to be 88%.[26]

CONF% = conforming mortgage originations (measured in dollars) as a percent of conventional single-family originations; forecasted to be 80% by industry.

SFORIG$ = dollar volume of single-family one-to-four unit mortgages; $1,700 billion is used here as a starting assumption to reflect market conditions during the years 2005–2008.[27] While

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[25] The property distribution reported in Table D.1 is an example of the output of the market share model. Thus, this section completes Step 1 of the three-step procedure outlined above in Section B.

[26] According to estimates by the Mortgage Bankers Association of America (MBAA), the conventional share of the 1–4 family market was between 86 and 88 percent of the market from 1993 to 1999, with a one-time low of 81 percent in 1994. Calculated from "1–4 Family Mortgage Originations" tables (Table 1—Industry and Table 2—Conventional Loans) from "MBAA Mortgage and Market Data," at *www.MBAAa.org/marketkdata/* as of July 13, 2000. More recent unpublished estimates by MBAA are slightly higher. As discussed in the text, the market sizing shares are affected by parameters other than this one, such as the multifamily share of newly-mortgaged dwelling units.

[27] In its August 17, 2004 forecast, Fannie Mae projected approximately $1.6 billion for 2005 and 2006 while the MBAA projected $1.8 billion for 2005 in its August 13, 2004 forecast. As discussed later, single-family originations could differ from

alternative assumptions will be examined, it must be emphasized that the important concept for deriving the goal-qualifying market shares is the relative importance of single-family versus multifamily mortgage originations (the "multifamily mix" discussed in Section C) rather than the total dollar volume of single-family originations considered in isolation.

Substituting these values into (1) yields an estimate for the conventional conforming market (CCSFM$) of $1,197 billion.

Second, the number of conventional conforming single-family mortgages (CCSFM#) is derived as follows:

(2) CCSFM# = (CCSFM$ * (1–REFI)/ PSFLOAN$) + (CCSFM$ * REFI)/ RSFLOAN$)

where

REFI = the refinance rate, assumed to be 35 percent for the baseline.[28]

PSFLOAN$ = the average conventional conforming purchase mortgage amount for single-family properties; estimated to be $146,000.[29]

RSFLOAN$ = the average conventional conforming refinance mortgage amount for single-family properties; estimated to be $131,000.[30]

$1,700 billion during the 2005–2008 period that the goals will be in effect. As recent experience shows, market projections often change. For example, in January 2003, the MBAA projected $1,246 billion for 2003; of course, actual 2003 mortgage originations were triple the latter amount. (*See http://www.MBAAa.org/marketdata/forecasts* for January 2003 Mortgage Finance Forecasts.) While Sections F–H will report the effects on the market estimates of alternative estimates of single-family mortgage originations, it should be emphasized that the important parameter for the market sizing estimates is the share of single-family-owner units relative to the share of single-family and multifamily rental units, not the absolute level of single-family originations.

[28] The model requires an estimated refinance rate because purchase and refinance loans can have different shares of goals-qualifying units. In 2003, the refinance rate was almost 70 percent. In its August 13, 2004 forecast, the MBAA projects 25 percent for 2005, as did Fannie Mae in its August 17, 2004 forecast. The baseline model uses a higher refinance rate of 35 percent because conforming conventional loans tend to refinance at a higher rate than the overall market. Sensitivity analyses for alternative refinance rates are presented in Sections F–H.

[29] The average 2002 purchase loan amount is estimated at $135,060 for owner occupied units using 2002 HMDA average loan amounts for single-family home purchase loans in metropolitan areas. A small adjustment is made to this figure to account for a small number of two-to-four and investor properties (see Section D above). This produces an average purchase loan size of $133,458 for 2002 which is then inflated 3 percent a year for three years and then rounded to arrive at an estimated $146,000 average loan size for home purchase loans in 2005.

[30] The average refinance loan amount is estimated by averaging the relationship between HMDA average purchase and refinance loan amounts for 1999 and 2000, which were non-refinance environments. Applying this average of 90 percent (refinance loan amount/purchase loan amount) to the $146,000 average loan amount for purchase loans gives a rounded estimate of $131,000 for average refinance loan amounts. When refinance environments are used, $146,000 average loan

Substituting these values into (2) yields an estimate of 8.5 million mortgages.

Third, the total number of single-family mortgages is divided among the three single-family property types. Using the 89.9/1.6/8.5 percentage distribution for single-family mortgages (see Section D), the following results are obtained:

(3a) SF–OM# = 0.899 * CCSFM# = number of owner-occupied, one-unit mortgages = 7.642 million.

(3b) SF–2–4M# = 0.016 * CCSFM# = number of owner-occupied, two-to-four unit mortgages = 0.136 million.

(3c) SF–INVM# = 0.085 * CCSFM# = number of one-to-four unit investor mortgages = 0.723 million.

Fourth, the number of dwelling units financed for the three single-family property types is derived as follows:

(4a) SF–O = SF–OM# + SF–2–4M# = number of owner-occupied dwelling units financed = 7.778 million.

(4b) SF 2–4 = 1.2 * SF–2–4M# = number of rental units in 2–4 properties where an owner occupies one of the units = 0.163 million.[31]

(4c) SF–INVESTOR = 1.3 * SF–INVM# = number of single-family investor dwelling units financed = 0.940 million.

Fifth, summing equations 4a–4c gives the projected number of newly-mortgaged single-family units (SF–UNITS):

(5) SF–UNITS = SF–O + SF 2–4 + SF–INVESTOR = 8.915 million

b. Multifamily Units

The number of multifamily dwelling units (MF–UNITS) financed by conventional conforming multifamily originations is calculated by the following series of equations:

(5a) TOTAL = SF–UNITS + MF–UNITS

(5b) MF–UNITS = MF–MIX * TOTAL = MF–MIX * (SF–UNITS + MF–UNITS) = [MF–MIX/(1 − MF–MIX)] * SF–UNITS where

MF–MIX = the "multifamily mix", or the percentage of all newly-mortgaged dwelling units that are multifamily; as discussed in Section C, alternative estimates of the multifamily market will be included in the analysis. As explained in Section C above, the baseline model assumes a multifamily mix of 15 percent; results are also presented in the basic market tables of Sections F–H for a higher (16.0 percent) multifamily mix and for lower (12.25 percent, 13.5 percent and 14.25 percent) multifamily mixes. In addition, further sensitivity analyses are reported in those sections for even lower multifamily mixes that could occur during periods of heavy single-family refinancing activity.

Assuming a multifamily mix of 15 percent and solving (5b) yields the following:

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amounts are used for both purchase and refinance loans. This relationship is consistent with the observed relationship in past refinance years such as 1998, 2001, and 2002.

[31] Based on the 2001 RFS, there is an average of 2.2 housing units per mortgage for 2–4 properties and 1.3 units per mortgage for single-family investor properties. See earlier discussion.

(5c) MF–UNITS = [0.15/0.85] * SF–UNITS = 0.176 * SF–UNITS = 1.6 million.

c. Total Units Financed

The total number of dwelling units financed by the conventional conforming mortgage market (TOTAL) can be expressed in three useful ways:

(6a) TOTAL = SF–UNITS + MF–UNITS = 10.6 million (or more precisely, 10,632,145 units)

(6b) TOTAL = SF–O + SF 2–4 + SF– INVESTOR + MF– UNITS

(6c) TOTAL = SF–O + SF–RENTAL + MF– UNITS where SF–RENTAL equals SF–2– 4 plus SF–INVESTOR

2. Dwelling Unit Distributions by Property Type

The next step is to express the number of dwelling units financed for each property type as a percentage of the total number of units financed by conventional conforming mortgage originations.[32]

The projections used above in equations (1)–(6) produce the following distributions of financed units by property type:

	% Share
SF–O	74.5
SF 2–4	1.5
SF INVESTOR	9.0

[32] The share of the mortgage market accounted for by owner occupants is (SF–O)/TOTAL; the share of the market accounted for by all single-family rental units is SF–RENTAL/TOTAL; and so on.

	% Share
MF–UNITS	15.0
Total	100.0
or	
SF–O	74.5
SF–RENTER	10.5
MF–UNITS	15.0
Total	100.0

Sections C and D discussed alternative projections for the mix of multifamily originations and the investor share of single-family mortgages. This appendix will report results for multifamily mixes of 13.5 percent, 15.0 percent, and 16.0 percent but sensitivity analyses for two other multifamily mix assumptions (*e.g.*, the 12.3 percent assumption used by Fannie Mae and the 14.2 assumption used by ICF) will also be reported. Under the baseline 15.0 percent multifamily mix, the newly-mortgaged unit distribution would be 74.5 percent for Single-Family Owner, 10.5 percent for Single-Family Renter, and 15.5 percent for Multifamily-Units. The analysis in sections F–H will focus on goals-qualifying market shares for this property distribution as well as the ones noted above.

As discussed in Section D, the basic tables providing the goals-qualifying market estimates in this appendix will report results for the following investor shares of single-family mortgages—8 percent, 8.5 percent, 9.0 percent, and 9.5 percent. For reasons

discussed in Section D, these investor mortgage shares are lower than the range (8.0 percent, 10.0 percent, and 12.0 percent) considered in the 2004 proposed GSE rule. The middle values (8.5 percent and 9.0 percent) are probably the ones that should be considered as ''baseline'' projections; the above example used a mortgage share of 8.5 percent, but 9.0 percent could also have been used to characterize a home purchase environment. However, HUD recognizes the uncertainty of projecting origination volume in markets such as single-family investor properties; therefore, the analysis in Sections F–H considers market assumptions other than these baseline assumptions.

Table D.7 reports the unit-based distributions produced by HUD's market share model for different combinations of these projections. Unit-based distributions are reported for each combination of a multifamily mix (12.25, 13.5, 14.25, 15.0, and 16.0) and investor mortgage share (8.0, 8.5, 9.0, and 9.5). The effects of the different projections can best be seen by examining the owner category which varies by 4.8 percentage points, from a low of 72.6 percent (multifamily mix of 16.0 percent coupled with an investor mortgage share of 9.5 percent) to a high of 77.4 percent (multifamily mix of 12.25 percent coupled with an investor mortgage share of 8.0 percent). The overall rental share is also highlighted in Table D.7, varying from 22.6 percent to 27.4 percent.

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Table D.7

Distribution of Financed Dwelling Units by Property Type for Different Projections of Multifamily and Single-Family Investor Originations

Investor Mortgage Share (Percent)	Multifamily Mix (Percent)																				
	12.25				13.5				14.25				15.0				16.0			
	8	8.5	9	9.5	8	8.5	9	9.5	8	8.5	9	9.5	8	8.5	9	9.5	8	8.5	9	9.5
Single-Family Owner	77.4	76.9	76.3	75.8	76.3	75.8	75.2	74.7	75.6	75.1	74.6	74.1	75.0	74.4	73.9	73.5	74.1	73.6	73.1	72.6
Single-Family Rental	10.4	10.9	11.4	11.9	10.2	10.7	11.3	11.8	10.1	10.6	11.1	11.7	10.1	10.6	11.1	11.5	9.9	10.4	10.9	11.4
Multifamily	12.3	12.3	12.3	12.3	13.5	13.5	13.5	13.5	14.3	14.3	14.3	14.3	15.0	15.0	15.0	15.0	16.0	16.0	16.0	16.0
All	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.1	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All Rental	22.7	23.2	23.7	24.2	23.7	24.2	24.8	25.3	24.4	24.9	25.4	26.0	25.1	25.6	26.1	26.5	25.9	26.4	26.9	27.4

The baseline projection of newly-mortgaged units in the 2004 proposed GSE rule was 72.2 percent for owner units, 12.8 percent for single-family rental units, and 15.0 percent for multifamily units. In this Final Rule, the baseline projection is 74.5 percent for owner units, 10.5 percent for single-family rental units, and 15.0 percent for multifamily units, if an investor mortgage share of 8.5 percent is used. If an investor share of 9.0 percent is used, then the baseline projection is 74.0 percent for owner units, 11.0 percent for single-family rental units, and 15.0 percent for multifamily units. Either way, compared with the 2004 proposed GSE rule, the rental share of financed dwelling units has dropped by approximately two percentage points due to the lower HMDA-based investor shares used in the Final Rule.

The unit distribution in ICF's projection model for 2005–2008 averaged 75.5 percent for owner units, 10.3 percent for single-family rental units, and 14.2 percent for multifamily units, which produces an overall rental share of 24.5 percent, a figure closed to those reported above (25.5–26.0 percent). The unit distribution used by Fannie Mae was approximately 77.4 percent for owner units, 10.4 percent for single-family rental units, and 12.3 percent for multifamily units, which produces an overall rental share of 22.6 percent,[33] a figure less than used by ICF (24.5 percent) or HUD (25.0–26.0 percent). Notice that Fannie Mae and ICF assume similar single-family rental shares (about 10.3 percent), but ICF assumes a larger multifamily mix than Fannie Mae (14.2 percent versus 12.3 percent). HUD's single-family rental shares (10.5–11.0 percent) are slightly higher than the shares (about 10.3 percent) used by ICF and Fannie Mae. HUD's multifamily baseline share (15.0 percent) is slightly higher than the average (14.2 percent) of ICF's best estimate, and significantly higher than Fannie Mae's assumed multifamily mix (12.3).

As discussed in Sections C and D, the Residential Finance Survey is the only mortgage data source that provides unit-based property distributions directly comparable to those reported below. Based on RFS data for 2001, HUD estimated that, of total dwelling units in properties financed by recently acquired conventional conforming mortgages, 68.3 percent were owner-occupied units, 16.5 percent were single-family rental units, and 15.2 percent were multifamily rental units. Thus, the RFS presents a much lower owner share than does HUD's, ICF's, or Fannie Mae's models. See Sections C and D for further discussion of the RFS.

Finally, it is interesting to compare the above market-based distributions of financed units with the distributions of units financed by mortgages purchased by Fannie Mae and Freddie Mac. As shown in Table D.6f, the 1993–2003 averages (unweighted) for Fannie Mae were 81.0 percent for owner units, 9.0 percent for single-family rental units, and 10.0 percent for multifamily units, which produces an overall rental share of 19.0 percent. During the year 2000, Fannie Mae's overall rental share did reach a peak of 24.1 percent. Freddie Mac's rental shares have been markedly lower than Fannie Mae's. The 1993–2003 averages (unweighted) for Freddie Mac were 84.3 percent for owner units, 6.3 percent for single-family rental units, and 9.3 percent for multifamily units, which produces an overall rental share of 15.7 percent.[34] Freddie Mac's rental share did peak at 17.5 percent in 2000. Still, it is clear that the market-based distributions project much higher rental shares than Freddie Mac has been purchasing. For example, the HUD projection of a 25-percent rental share is over nine percentage points higher than Freddie Mac's 1999–2003 average rental share (15.7 percent) and over seven percentage points higher than Freddie Mac's peak rental share (17.5 percent in 2000). The 31.7-percent rental share from the RFS is 16 percentage points higher than Freddie Mac's 1999–2003 average rental share (15.7 percent) and over 14 percentage points higher than Freddie Mac's peak rental share (17.5 percent in 2000).

F. Size of the Conventional Conforming Mortgage Market Serving Low- and Moderate-Income Families

This section estimates the size of the low- and moderate-income market by applying low- and moderate-income percentages to the property shares given in Table D.7. This section essentially accomplishes Steps 2 and 3 of the three-step procedure discussed in Section B.2.

Technical issues and data adjustments related to the low- and moderate-income percentages for owners and renters are discussed in the first two subsections. Then, estimates of the size of the low- and moderate-income market are presented along with several sensitivity analyses. Based on these analyses, HUD concludes that 51–56 percent is a reasonable estimate of the mortgage market's low- and moderate-income share for the four years (2005–2008) when the new goals will be in effect.

1. Low- and Moderate-Income Percentage for Single-Family-Owner Mortgages

a. HMDA Data

The most important determinant of the low- and moderate-income share of the mortgage market is the income distribution of single-family borrowers. HMDA reports annual income data for families who live in metropolitan areas and purchase a home or refinance their existing mortgage.[35] The data cover conventional mortgages below the conforming loan limit, which was $322,700 in 2003. Table D.8a gives the percentage of mortgages originated for low- and moderate-income families for the years 1992–2003. Data are presented for home purchase, refinance, and all single-family-owner loans. The discussion below will often focus on home purchase loans because they typically account for the majority of all single-family-owner mortgages.[36] For each year, a low- and moderate-income percentage is also reported for the conforming market without B&C loans.

Table D.8a also reports similar data for very-low-income families (that is, families with incomes less than 60 percent of area median income). As discussed in Section H, very-low-income families are the main component of the special affordable mortgage market.

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[33] Because of rounding, the two rental component shares do not add to the overall rental share.

[34] Because of rounding, the two rental component shares do not add to the overall rental share.

[35] HMDA data are expressed in terms of number of loans rather than number of units. In addition, HMDA data do not distinguish between owner-occupied one-unit properties and owner-occupied 2–4 properties. This is not a particular problem for this section's analysis of owner incomes.

[36] Sensitivity analyses will focus on how the results change during a heavy refinancing environment.

Table D.8a

Single-Family-Owner Mortgage Market in Metropolitan Areas by Borrower Income: 1992-2003 HMDA Data

	Home Purchase		Refinance		Total	
	Conforming Market	Market W/O B&C loans	Conforming Market	Market W/O B&C loans	Conforming Market	Market W/O B&C loans
Very-Low-Income Share						
1992	8.7 %	8.7 %	4.5 %	4.4 %	5.8 %	5.8 %
1993	10.8	10.8	5.8	5.7	7.3	7.2
1994	11.9	11.9	11.0	10.6	11.5	11.3
1995	12.0	12.0	12.3	11.7	12.1	11.9
1996	12.7	12.7	13.0	12.2	12.8	12.5
1997	12.9	12.9	14.4	13.3	13.6	13.0
1998	13.3	13.2	11.3	10.4	12.1	11.4
1999	15.0	14.7	16.2	14.8	15.6	14.8
2000	14.5	14.2	18.9	17.5	16.2	15.4
2001	13.6	13.5	12.3	11.7	12.7	12.3
2002	13.8	13.8	12.3	11.8	12.7	12.4
2003	13.6	13.7	11.8	11.5	12.2	12.0
Low- and-Moderate-Income Share						
1992	34.4 %	34.4 %	25.2 %	25.2 %	28.2 %	28.1 %
1993	38.9	38.9	29.3	29.3	32.2	32.1
1994	41.8	41.8	39.9	39.3	41.0	40.7
1995	41.4	41.4	41.1	40.1	41.3	40.9
1996	42.2	42.2	42.7	41.6	42.4	41.9
1997	42.2	42.1	44.8	43.0	43.4	42.5
1998	43.0	42.8	39.7	38.3	40.9	39.9
1999	45.2	44.8	47.2	45.3	46.3	45.1
2000	44.3	43.9	51.3	49.3	47.0	45.9
2001	43.2	42.9	41.8	40.9	42.3	41.6
2002	44.8	44.6	41.8	41.0	42.7	42.0
2003	44.7	44.6	40.8	40.2	41.7	41.2

Source: HMDA data for metropolitan areas. See text for methods of excluding B&C loans from the market. Very-low-income includes borrowers with an income less than or equal to 60 percent of the area median income (AMI). Low- and moderate-income includes less than or equal to AMI.

Two trends in the income data should be mentioned—one related to the growth in the market's funding of low- and moderate-income families during the 1990s (and particularly the growth since 1998 which was the last year analyzed in HUD's 2000 GSE Rule); and the other related to changes in the borrower income distributions for refinance and home purchase mortgages. Throughout this appendix, ''low- and moderate-income'' will often be referred to as ''low-mod'.

Recent Trends in the Market Share for Lower Income Borrowers. First, focus on the percentages in Table D.8a for the total (both home purchase and refinance) conforming market. After averaging about 30 percent during 1992–93, the percentage of borrowers with less than area median income jumped to 41.0 percent in 1994, and remained above 40 percent through 2003. Over the ten-year period, 1994 to 2003, the low-mod share of the total market averaged 42.9 percent (or 42.2 percent if B&C loans are excluded from the market totals).[37] The share of the market accounted for by very-low-income borrowers followed a similar trend, increasing from 6–7 percent in 1992–93 to about 12 percent in 1994 and averaging 13.2 percent during the 1994-to-2003 period (or 12.7 percent if B&C loans are excluded).

Next, consider the percentages for home purchase loans. The share of the home loan market accounted for by less-than-median-income borrowers increased from 34.4 percent in 1992 to 44.7 percent in 2003. Within the 1994-to-2002 period, the low-mod share of the home purchase market averaged 44.4 percent between 1999 and 2003, compared with 42.1 percent between 1994 and 1998. Similarly, the very-low-income share of the home purchase market was also higher during the 1999-to-2002 period than during the 1994-to-1998 period (14.1 percent versus 12.6 percent). Note that within the more recent period, the low-mod share for home purchase loans was particularly high during 1999 (45.2 percent) and 2000 (44.3 percent) before falling slightly in 2001 (43.2 percent), only to rebound again in 2002 (44.8 percent) and 2003 (44.7 percent). As shown in Table D.8a, the low-mod shares do not change much when B&C home loans are excluded from the market definition; this is because B&C loans are mainly refinance loans.

It appears that the affordable lending market for home purchase loans is even stronger today than when HUD wrote the 2000 Rule, which covered market data through 1998. The very-low-income and low-mod percentages were higher during 1999 to 2003 than they were during the earlier period. In addition, when HUD wrote the 2000 Rule, there had been five years (1994–98) of solid affordable lending for lower-income borrowers. Now, with five additional years of data for 1999–2003, there have been ten years of strong affordable lending.

Of course, it is recognized that lending patterns could change with sharp changes in interest rates and the economy. However, the

fact that lending to low-income families has remained at a high level for ten years demonstrates that the market has changed in fundamental ways from the mortgage market of the early 1990s. The numerous innovative products and outreach programs that the industry has developed to attract lower-income families into the homeownership and mortgage markets appear to be working and there is no reason to believe that they will not continue to assist in closing troubling homeownership gaps that exist today. As explained in Appendix A, the demand for homeownership on the part of minorities, immigrants and non-traditional borrowers should help to maintain activity in the affordable portion of the mortgage market. Thus, while economic recession or higher interest rates would likely reduce the low- and moderate-income share of mortgage originations, there is evidence that the low-mod market might not return to the low levels of the early 1990s. There is also evidence that the affordable lending market increased slightly since 1998, although it is recognized that this could be due to the recent period of historically low interest rates.

Refinance Mortgages. In the 2000 Rule, HUD's market projection model assumed that low-mod borrowers represented a smaller share of refinance mortgages than they do of home purchase mortgages. However, as shown in Table D.8a, the income characteristics of borrowers refinancing mortgages seem to depend on the overall level of refinancing in the market. During the refinancing wave of 1992 and 1993, refinancing borrowers had much higher incomes than borrowers purchasing homes. For example, during 1993 low- and moderate-income borrowers accounted for 29.3 percent of refinance mortgages, compared to 38.9 percent of home purchase borrowers. While this same pattern was exhibited during the two recent refinancing periods (1998 and 2001–2002–2003), the differentials were much smaller—during 2001–2002–2003 (1998), low-mod borrowers accounted for 41.5 (39.7) percent of refinance loans, compared with 44.2 (43.0) percent of home purchase loans. However, the refinance effect was still evident, as can be seen by the almost ten percentage point drop in the low-mod percentage for refinance loans between 2000 (a low refinance year) and 2001 (a high refinance year).

On the other hand, for recent years characterized by a low level of refinancing, the low-mod share of refinance mortgages has been about the same or even greater than that of home purchase mortgages. As shown in Table D.8a, there was little difference in the very-low-income and low-mod shares of refinance and home purchase loans during 1995 and 1996. In 1997, 1999, and 2000, the two lower-income shares (*i.e.*, very-low-income and low-mod shares) of refinance mortgages were significantly higher than the lower-income shares of home purchase loans. To a certain extent, this pattern was influenced by the growth of subprime loans, which are mainly refinance loans. If B&C loans are excluded from the market definition, the home purchase and refinance percentages are approximately the same in

1997 and 1999, as well as in 1995 and 1996. (See Table D.8a.) Even after excluding all subprime loans from the market definition in 1997 and 1999, the very-low-income and low-mod shares for refinance loans are only slightly less (about one percentage point) than those for home purchase loans.

The year 2000 stands out because of the extremely high lower-income shares for refinance loans. In that year, the low-mod (very-low-income) share of refinance loans was 7.0 (4.4) percentage points higher than the low-mod (very-low-income) share of home purchase loans; this differential is reduced to 5.4 (3.3) percent if B&C loans are excluded from the market definition (see Table D.8a). The differential for 2000 is reduced further to 2.8 (1.5) percent if all subprime loans (both A-minus and B&C) are excluded from the market definition (not reported). While the projection model (explained below) for years 2005–08 will input low-mod percentages for the entire conforming market, the model will exclude the effects of B&C loans. Sensitivity analyses will also be conducted showing the effects on the overall market estimates of excluding all subprime loans as well as other loan categories such as manufactured housing loans.

2000 Census Data and New OMB Metropolitan Area Definitions. Going forward, HUD will be re-benchmarking its median incomes for metropolitan areas and non-metropolitan counties based on 2000 Census median incomes, and will be incorporating the effects of the new OMB metropolitan area definitions. Thus, under the new housing goals, the GSEs' performance will be scored based on 2000 Census data and new OMB definitions of metropolitan areas (labeled ''CBSA definitions''). One issue concerns whether the new data and the new definitions will result in lower or higher low-mod percentages relative to historical low-mod percentages based on the 1990 Census and earlier OMB definitions of metropolitan areas (labeled ''MSA definitions''). HUD projected the effects of these two changes on the low- and moderate-income shares of the single-family-owner market for the years 1999–2003. The middle portion of Table D.8b reports low-mod shares for single-family-owner loans under the MSA and CBSA approaches for the years 1999–2003. Except for 2003, the low-mod shares for both home purchase and total SFO loans are lower under the new CBSA approach than under the old MSA approach. Because the results for 1999–2002 differed from the results for 2003, these two periods are considered separately. Under the historical data, the average low-mod share of the conventional conforming market was 44.4 percent for home purchase loans (unweighted average of 1999–2002 percentages in Table D.8a); the corresponding average with the projected data was 43.2 percent, yielding a differential of 1.2 percentage points. For total (both home purchase and refinance) loans, the average low-mod share of the conventional conforming market based on historical data was 44.6 percent (unweighted average of 1999–2002 percentages); the corresponding average with the projected data was 43.4

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[37] The annual averages of the goals-qualifying mortgages reported in this appendix are unweighted averages; for analyses using weighted averages *see* Appendix A.

percent, again yielding a differential of 1.2 percentage points, with the same pattern exhibited for the annual differentials.[38] It

appears that the low-mod share for single-family-owners in the conventional

conforming market will be at least one percentage point less due to the re-benchmarking of area median incomes and the new OMB definitions of metropolitan areas.

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[38] Between 1999 and 2002, the average single-family-owner differential between the historical and

projected low-mod percentages was 1.1 percentage point for Fannie Mae and 1.3 percentage point for Freddie Mac.

Table D.8b

Comparison of Special Affordable and Low- and Moderate-Income Shares: 1990-Census Data Versus 2000-Census Data, 1999-2003

	Home Purchase		Total (Home Purchase and Refinance)	
	Census 1990/MSA Geography	Census 2000/CBSA Geography	Census 1990/MSA Geography	Census 2000/CBSA Geography
Special Affordable				
1999	17.3	17.5	18.3	18.5
2000	16.9	17.2	19.1	19.4
2001	15.8	15.6	15.0	14.8
2002	16.2	15.6	14.9	14.3
2003	15.9	16.9	14.3	15.0
1999-2003 (Wt.)	16.4	16.5	15.6	15.7
1999-2003 (Unwt.)	16.4	16.6	16.3	16.4

	Home Purchase		Total (Home Purchase and Refinance)	
	Census 1990/MSA Geography	Census 2000/CBSA Geography	Census 1990/MSA Geography	Census 2000/CBSA Geography
Low-Mod				
1999	45.2	44.4	46.3	45.5
2000	44.3	43.7	47.0	46.4
2001	43.2	41.8	42.3	41.0
2002	44.8	42.7	42.7	40.5
2003	44.7	45.8	41.7	42.6
1999-2003 (Wt.)	44.3	43.8	43.3	42.6
1999-2003 (Unwt.)	44.4	43.7	44.0	43.2

Note: As explained in the text, the 2003 data were initially defined in terms of 2000 census geography. Therefore, they had to be re-apportioned back to 1990 Census geography. The remaining years (1999-2001) are defined in terms of 1990 Census geography and had to be re-apportioned to 2000 Census geography.

Based on the above analysis of 1999–2002 data, it would appear the low-mod share of the conventional conforming market is about one percentage point less when based on projected data, as compared with historical data. However, the data for 2003 suggest a different picture. As shown in Table D.8b, the 2003 CBSA-based low-mod share for home purchase loans is 45.8 percent, which is 1.1 percentage points higher than the corresponding MSA-based percentage of 44.7 percent. Similarly, the CBSA-based percentage is 1.1 percentage point higher when all owner loans are considered. Thus, the more recent 2003 data suggest that the GSEs will be scored higher than they have historically been scored.

Table A.18 in Appendix A reported similar MSA and CBSA data for home purchase loans acquired by Fannie Mae and Freddie Mac. Again, the low-mod shares for the GSEs' purchases of both home purchase and total SFO loans were lower under the new CBSA approach than under the old MSA approach for 1999–2002, but not for 2003. The proposed GSE rule accounted for the 1999–2002 discrepancy by reducing the overall low-mod estimates by one percentage point. Given the 2003 results, which show higher low-mod shares under the new CBSA approach, that procedure is questionable. This Final Rule follows a different procedure. The actual CBSA-based low-mod shares for owners (reported in Table D.8b) are incorporated directly into the analysis.

The projection model will initially assume that refinancing is 35 percent of the single-family mortgage market; this will be followed by projection models that reflect heavy refinance environments. Given the volatility of refinance rates from year to year, it is important to conduct sensitivity tests using different refinance rates. However, as explained in the preamble, HUD has included a provision in this Final Rule that eliminates the negative effects of heavy refinancing periods on the GSEs' goals performance.

b. Manufactured Housing Loans

Because manufactured housing loans are such an important source of affordable housing, they are included in the mortgage market definition in this appendix—or at least that portion of the manufactured housing market located in metropolitan areas is included, as HMDA doesn't adequately cover non-metropolitan areas. The GSEs have questioned HUD's including these loans in its market estimates; therefore, following the same procedure used in the 2000 Rule and the 2004 proposed GSE Rule, this Appendix will report the effects of excluding manufactured home loans from the market estimates. As explained later, the effect of manufactured housing on HUD's metropolitan area market estimate for each of the three housing goals is approximately one percentage point or less.

As discussed in Appendix A, the manufactured housing market increased rapidly during the 1990s, as units placed in serviced increased from 174,000 in 1991 to 374,000 in 1998. However, due to various problems in the industry such as lax underwriting and repossessions, volume has declined in recent years, falling to 192,000 in

2001, to 172,000 in 2002, and to 135,000 in 2003. Still, the affordability of manufactured homes for lower-income families is demonstrated by their average price of $48,800 in 2001, a fraction of the median price for new ($175,000) and existing ($147,800) homes. Many households live in manufactured housing because they simply cannot afford site-built homes, for which construction costs per square foot are much higher.

Although manufactured home loans cannot be identified in the HMDA data, Randy Scheessele at HUD identified 21 lenders that primarily originated manufactured home loans in 2001 and likely account for most of these loans in the HMDA data for metropolitan areas.[39] HMDA data on home loans originated by these lenders indicate that:[40]

• A very high percentage of these loans—75 percent in 2001—would qualify for the Low- and Moderate-Income Goal,

• A substantial percentage of these loans—42 percent in 2001—would qualify for the Special Affordable Goal, and

• Almost half of these loans—47 percent in 2001—would qualify for the Underserved Areas Goal (defined in terms of the 1990 Census data).[41]

Thus an enhanced presence in this market by the GSEs would benefit many lower-income families. It would also contribute to their presence in underserved rural areas, especially in the South.

2. Low- and Moderate-Income Percentage for Renter Mortgages

Following the 2000 Rule, measures of the rent affordability of the single-family rental and the multifamily rental markets are obtained from the American Housing Survey (AHS) and the Property Owners and Managers Survey (POMS). As explained below, the AHS provides rent information for the stock of rental properties while the POMS provides rent information for flow of mortgages financing that stock. As discussed below, the AHS and POMS data provide very similar estimates of the low- and moderate-income share of the rental market.

a. American Housing Survey Data

The American Housing Survey does not include data on mortgages for rental properties; rather, it includes data on the characteristics of the existing rental housing stock and recently completed rental properties. Current data on the income of prospective or actual tenants has also not

[39] See Randall M. Scheessele, *1998 HMDA Highlights, op. cit.* and "HUD Subprime and Manufactured Home Lender List" at *http://www.huduseer.org/datasets/manu.html.*

[40] Since most HMDA data are for loans in metropolitan areas and a substantial share of manufactured homes are located outside metropolitan areas, HMDA data may not accurately state the goals-qualifying shares for loans on manufactured homes in all areas.

[41] While many fewer manufactured home loans were identified in the 2002 and 2003 HMDA data, the loans showed similar goals-qualifying shares: low-mod (77.6 percent and 75.4 percent, respectively), special affordable (45.0 percent and 47.1 percent, respectively), and underserved areas (46.9 percent and 45.2 percent, respectively).

been readily available for rental properties. Where such income information is not available, FHEFSSA provides that the rent of a unit can be used to determine the affordability of that unit and whether it qualifies for the Low- and Moderate-Income Goal. A unit qualifies for the Low- and Moderate-Income Goal if the rent does not exceed 30 percent of the local area median income (with appropriate adjustments for family size as measured by the number of bedrooms). Thus, the GSEs' performance under the housing goals is measured in terms of the affordability of the rental dwelling units that are financed by mortgages that the GSEs purchase; the income of the occupants of these rental units is not considered in the calculation of goal performance. For this reason, it is appropriate to base estimates of market size on rent affordability data rather than on renter income data.

A rental unit is considered to be "affordable" to low- and moderate-income families, and thus qualifies for the Low- and Moderate-Income Goal, if that unit's rent is equal to or less than 30 percent of area median income. Table D.14 of Appendix D in HUD's 2000 Rule reported AHS data on the affordability of the rental housing stock for the survey years between 1985 and 1997. The 1997 AHS showed that for 1–4 unit unsubsidized single-family rental properties, 94 percent of all units and of units constructed in the preceding three years had gross rent (contract rent plus the cost of all utilities) less than or equal to 30 percent of area median income. For multifamily unsubsidized rental properties, the corresponding figure was 92 percent. The AHS data for the other survey years were similar to the 1997 data.

b. Property Owners and Managers Survey (POMS)

As discussed in the 2000 GSE Rule, there were concerns about using AHS data on rents from the outstanding rental stock to proxy rents for newly mortgaged rental units. HUD investigated that issue further using the POMS.

POMS Methodology. The affordability of multifamily and single-family rental housing backing mortgages originated in 1993–1995 was calculated using internal Census Bureau files from the American Housing Survey-National Sample (AHS) from 1995 and the Property Owners and Managers Survey from 1995–1996. The POMS survey was conducted on the same units included in the AHS survey, and provides supplemental information such as the origination year of the mortgage loan, if any, recorded against the property included in the AHS survey. Monthly housing cost data (including rent and utilities), number of bedrooms, and metropolitan area (MSA) location data were obtained from the AHS file.

In cases where units in the AHS were not occupied, the AHS typically provides rents, either by obtaining this information from property owners or through the use of imputation techniques. Estimated monthly housing costs on vacant units were therefore calculated as the sum of AHS rent and utility costs estimated using utility allowances published by HUD as part of its regulation of the GSEs. Observations where neither

monthly housing cost nor monthly rent was available were omitted, as were observations where MSA could not be determined. Units with no cash rent and subsidized housing units were also omitted. Because of the shortage of observations with 1995 originations, POMS data on year of mortgage origination were utilized to restrict the sample to properties mortgaged during 1993–1995. POMS weights were then applied to estimate population statistics. Affordability calculations were made using 1993–95 area median incomes calculated by HUD.

POMS Results. The rent affordability estimates from POMS of the affordability of newly-mortgaged rental properties are quite consistent with the AHS data on the affordability of the rental stock (discussed above). Ninety-six (96) percent of single-family rental properties with new mortgages between 1993 and 1995 were affordable to low- and moderate-income families, as were 96 percent of newly-mortgaged multifamily properties. Thus, these percentages from the POMS are similar to those from the AHS for the rental stock.

Further Results and Comments. The baseline projection from HUD's market share model assumes that 90 percent of newly-mortgaged, single-family rental and multifamily units are affordable to low- and moderate-income families.[42] As noted above, the analysis of AHS and POMS data from the mid-1990s supports the use of a 90 percent low-mod figure, and also supports using rental stock data from the AHS as a proxy for the affordability characteristics of new mortgages financing rental properties. Updating these results using the 2001 and 2003 AHS produced similar (over 90 percent) low-mod estimates for both the single-family rental stock and the multifamily rental stock. For example, using ICF's assumptions for an AHS analysis (see ICF Appendix, p. 45), the 2003 AHS showed that 94 (93) percent of single-family (multifamily) rental units would qualify as being affordable to low- and moderate-income families. While ICF used 90 percent for multifamily, ICF concluded that 87.5 percent should be used for single-family rentals. HUD's updated analysis of the AHS, which is explained in more detail in Section H below, does not support using ICF's 87.5 percent assumption, except for sensitivity analysis. Since single-family rental units account for approximately 10 percent all financed units in both ICF's and HUD's market share models, the effect on the overall low-mod goal of using 87.5 percent instead of 90.0 percent would be only 0.25 percentage point. (the 2.5 percentage point low-mod differential multiplied by the 0.10

property share for single-family rental properties).

Based on its analysis of the AHS (see Fannie Mae Appendix, I–31–I–32), Fannie Mae concluded that the low-mod shares for both single-family and multifamily properties had fallen from 90 percent in 1997 to 86 percent in 2001. In its analysis, Fannie Mae provides a weight of 0.07 to the low-mod share (74.8 percent) of recently-constructed single-family rental units in the AHS, and the residual 0.93 weight to the low-mod share (91.8 percent) of the remaining existing units in the AHS. While Fannie Mae appears to use a low-mod share of 86 percent for single-family rentals in its market sizing models, applying these weights to the 2001 AHS data (reported by Fannie Mae in Table I.7 on p. I–32) yields approximately 90 percent for the low-mod share of single-family rental properties. Similarly, for multifamily properties, Fannie Mae provides a weight of 0.11 to the low-mod share (75.3 percent) of recently-constructed multifamily rental units in the AHS, and the residual 0.89 weight to the low-mod share (91.3 percent) of the remaining existing units in the AHS. Again, while Fannie Mae appears to use a low-mod share of 86 percent for multifamily rentals in its market sizing models, applying the above weights to the 2001 AHS data also yields approximately 90 percent for the low-mod share of multifamily rental properties. Since single-family and multifamily rental units combined account for about 25 percent of all financed units in the market sizing models, the effect on the overall low-mod share of using 86 percent instead of 90 percent would be about one percentage point. (the 4.0 percentage point low-mod differential multiplied by the 0.25 property share for single-family and multifamily rental properties).[43] Fannie Mae expressed particular concern with HUD's Case 3, which assumed an even higher 95.0 percent low-mod share for rental properties; HUD has reduced this assumption to 92.5 percent in the Case 3 analysis below. HUD's Case 2 will also consider a low-mod percentage of 87.5 percent.

The low-mod characteristics of the GSEs' own purchases can also be examined. Between 1999 and 2003, 86.4 percent of Fannie Mae's single-family rental purchases qualified as low-mod, as did 87.3 percent of Freddie Mac's purchases. During the same period, 90.7 percent of Fannie Mae's multifamily rental purchases qualified as low-mod, as did 92.6 percent of Freddie Mac's purchases. One issue discussed below concerns the impact on the GSEs' low-mod performance of switching to 2000 Census data and the new OMB metropolitan area definitions. The above GSE percentages were

recalculated after applying the new data and new OMB definitions back to 1999. Similar low-mod results were obtained for both single-family and multifamily rentals. Thus, the 2000 Census data and the new OMB metropolitan area definitions will have no impact on the low-mod scoring of the GSEs' rental purchases.

Most of ICF's and the GSEs' concerns about HUD's estimates of the affordability of rental housing properties related to the sizing of the special affordable market. Therefore, more detail treatment of these issues will be provided in Section H below.

3. Size of the Low- and Moderate-Income Mortgage Market

This section provides estimates of the size of the low- and moderate-income mortgage market. Subsection 3.a presents new estimates of the low-mod market while Subsection 3.b reports the sensitivity of the new estimates to changes in assumptions about economic and mortgage market conditions.

a. Estimates of the Low- and Moderate-Income Market

This section provides HUD's estimates for the size of the low- and moderate-income mortgage market that will serve as a proxy for the four-year period (2005–2008) when the new housing goals will be in effect. The estimates are compared with recent experience in the low-mod market since 1999. As discussed in Sections C and D, market estimates will be presented for different combinations of the investor mortgage share (8.8, 8.5, 9.0, and 9.5) and the multifamily mix (12.25, 13.5, 14.25, 15.0, and 16.0). This range reflects uncertainty about the data and future conditions in these rental markets. As discussed in Section C, HUD continues to use a multifamily (MF) mix of 15.0 percent as its baseline for a home purchase environment; this is strongly supported by RFS analysis. While results are reported for Fannie Mae's MF mix of 12.3 percent, HUD does not believe the MF mix will fall to that level in a home purchase environment; rather, the results are reported to gauge the effects on the market size of alternative assumptions supported by Fannie Mae. Three alternative sets of projections about rental property low- and moderate-income percentages are given in Table D.9. Case 1 projections represent the baseline and intermediate case; for example, it assumes that the low-mod share of rental loans is 90 percent. Case 1 will be the focus of the market analysis in this section. Case 2 assumes slightly lower goals-qualifying shares (*e.g.*, an 85 percent low-mod share) for rental properties while Case 3 assumes slightly higher goals-qualifying shares (*e.g.*, a 92.5 percent low-mod share).

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[42] In 2002, 75 percent of GSE purchases of single-family rental units and 89 percent of their purchases of multifamily units qualified under the Low- and Moderate-Income Goal, excluding the effects of missing data.

[43] Applying Fannie Mae's weights to data from the 2003 AHS produces low-mod shares of slightly over 90 percent for both single-family and multifamily rental properties.

Table D.9

Alternative Assumptions for Goals-Qualifying Shares of Single-Family Rental and Multifamily Goals Mortgages

	Case 1	Case 2	Case 3
1. Units Per Single-Family Mortgage			
Single-Family 2-4	2.20	2.20	2.25
Single-Family 1-4 Investor	1.30	1.30	1.35
2. Percentage Affordable at Area Median Income (AMI)			
Single-Family Rental	90.0%	85.0%	92.5%
Multifamily	90.0%	85.0%	92.5%
3. Percentage Underserved (1990-Based)			
Single-Family Rental	42.5%	40.0%	45.0%
Multifamily	48.0%	46.0%	48.0%
4. Percentage Underserved (2000-Based)			
Single-Family Rental	52.0%	50.0%	54.0%
Multifamily	58.0%	56.0%	59.0%
5. Percent Special Affordable			
Single-Family Rental	58.0%	53.0%	63.0%
Multifamily	58.0%	54.0%	62.0%

Note: The underserved area shares in # 4 are based on 2000 census tracts. See text for discussion of "2000-Based" underserved area shares based on 2000 census tracts.

Because single-family-owner units account for about 75 percent of all newly mortgaged dwelling units, the low- and moderate-income percentage for owners is the most important determinant of the total market estimate. Thus, Table D.10 provides market estimates for different low-mod percentages for the owner market as well as for different MF mix percentages and investor mortgage shares. In a home purchase environment, the most likely MF mix is 15.0 percent and the most likely investor mortgage share is in the 8.5–9.0 percent range. For simplicity, the combination of a 15.0-percent MF mix and a 8.5-percent investor share will be labeled the baseline when presenting the results below. Including a 9.0-percent investor mortgage share as the baseline would increase the low-mod market estimate by about 0.2–0.3 percentage point. The low-mod market estimates in Table D.10 exclude B&C loans, as explained below.

Table D.10 assumes a refinance rate of 35 percent, which means that the table reflects home purchase or low-refinancing environments. After presenting these results, market estimates reflecting heavy refinance environments will be presented. Because of the increase in single-family mortgages, the multifamily share of the mortgage market typically falls during a heavy refinance environment; therefore, several sensitivity analyses using lower multifamily mixes are examined below.

Table D.10

Low- and Moderate-Income Market Estimates

Sensitivity Analysis

Investor Mortgage Share (Percent)	Multifamily Mix (Percent)																			
	12.25				13.5				14.25				15.0				16.0			
Low-Mod Percentage for SF Owners	8	8.5	9	9.5	8	8.5	9	9.5	8	8.5	9	9.5	8	8.5	9	9.5	8	8.5	9	9.5
47	56.5	56.7	57.0	57.2	57.0	57.2	57.5	57.7	57.3	57.5	57.8	58.0	57.6	57.8	58.1	58.3	58.0	58.2	58.5	58.7
46	55.6	55.9	56.1	56.4	56.2	56.4	56.7	56.9	56.5	56.7	57.0	57.2	56.8	57.0	57.3	57.5	57.2	57.4	57.7	57.9
45	54.8	55.1	55.3	55.6	55.4	55.6	55.9	56.1	55.7	55.9	56.2	56.4	56.0	56.2	56.5	56.7	56.4	56.7	56.9	57.1
44	54.0	54.3	54.5	54.8	54.5	54.8	55.1	55.3	54.9	55.1	55.4	55.6	55.2	55.4	55.7	56.0	55.6	55.9	56.1	56.4
43	53.2	53.4	53.7	54.0	53.7	54.0	54.3	54.5	54.1	54.3	54.6	54.8	54.4	54.7	54.9	55.2	54.8	55.1	55.4	55.6
42	52.3	52.6	52.9	53.2	52.9	53.2	53.4	53.7	53.3	53.5	53.8	54.1	53.6	53.9	54.1	54.4	54.1	54.3	54.6	54.8
41	51.5	51.8	52.1	52.3	52.1	52.4	52.6	52.9	52.4	52.7	53.0	53.3	52.8	53.1	53.3	53.6	53.3	53.5	53.8	54.1
40	50.7	51.0	51.3	51.5	51.3	51.6	51.8	52.1	51.6	51.9	52.2	52.5	52.0	52.3	52.5	52.8	52.5	52.7	53.0	53.3
39	49.9	50.2	50.4	50.7	50.5	50.8	51.0	51.3	50.8	51.1	51.4	51.7	51.2	51.5	51.8	52.0	51.7	52.0	52.2	52.5

In the 2000 Rule, HUD assumed that the low-mod share of refinance loans was three percentage points lower than the low-mod share of borrowers purchasing a home. However, as discussed earlier, the low-mod share of refinance loans has equaled or been greater than the low-mod share of home purchase loans during recent home purchase environments such as 1995–97 or 1999–2000; thus, the assumption of a lower low-mod shares for refinance loans is initially dropped for this analysis but will be reintroduced during the sensitivity analysis and during the discussion of heavy refinance environments.

There are two ways to view the single-family-owner low-mod percentages reported in the first column of Table D.10. A *first approach* would be to view them as representing low-mod percentages of only the home purchase market. For example, a low-mod percentage for home purchase loans of 43 percent—combined with the assumption of an equal low-mod share for refinance loans (*i.e.*, also 43 percent) and with the other model assumptions (such as a multifamily mix of 15 percent and an investor share of 8.5 percent)—produces an estimate of 54.6 percent for the low-mod share of the overall (owner and rental) market, excluding B&C loans. Thus, the reader can view Table D.10 as showing the overall low-mod market estimate once the reader specifies his or her views about the low-mod share of the single-family home purchase market (given the other model assumptions). In this case, if the reader believes that the low-mod share of refinance loans should be lower than that for home purchase loans, the reader simply has to multiply the differential amount by 0.35 (which is the refinance share of single-family-owner loans) and 0.745 (which is the single-family-owner share of all dwelling units in the model that assumes a 15 percent multifamily mix and 8.5 percent investor mortgage share). For example, applying the assumption in the 2000 Rule that the low-mod share is three percentage points lower for refinance loans would reduce the overall low-mod share of the market by 0.78 percentage points (3.0 times 0.35 times 0.745); if the low-mod share of refinance loans is one percentage point below that of home purchase loans, then the overall low-mod market estimate falls 0.26 percentage point. In this manner, the reader can easily adjust the market estimates reported in Table D.10 to incorporate his or her own views about differences in the low-mod share of home purchase and refinance loans.

A *second approach* would be to view the low-mod percentages (in the first column of Table D.10) as representing low-mod shares for the overall single-family-owner market, including both home purchase and refinance loans. This approach does not specify separate low-mod percentages for home purchase and refinance loans, but rather focuses on the overall single-family-owner environments. Thus, it allows for mortgage market environments where the low-mod share of refinance loans is greater than the low-mod share for home purchase loans. For example, a low-mod percentage for single-family-owner loans of 47 percent would reflect the year 2000 environment, which had a low-mod home purchase percentage of 44.3

percent combined with a higher low-mod refinance percentage of 51.3 percent. Of course, the 47 percent low-mod share for the overall single-family-owner market could be consistent with other combinations of low-mod shares for home purchase and refinance loans. In this case, a 47 percent assumption for the overall single-family-owner market produces an estimate of 57.8 percent for the low-mod share of the overall (owner and rental) market, excluding B&C loans.

While both approaches will be discussed below, most of the discussion will focus on the first approach. It should be noted that several low-mod percentages of the owner market are given in Table D.10 to account for different perceptions of that market. Essentially, HUD's approach throughout this appendix is to provide several sensitivity analyses to illustrate the effects of different views about the goals-qualifying share of the single-family-owner market. This approach recognizes that there is some uncertainty in the data and that there can be different viewpoints about the various market definitions and other model parameters.

Market Estimates. Considering a 15.0-percent MF mix and a 8.5-percent investor mortgage share, the low-mod market estimates reported in Table D.10 are: 55.7 percent if the owner percentage is 44.4 percent (average home purchase share for 1999–2003); 56.2 percent if the owner percentage is 45 percent (home purchase share for 1999, 2002, and 2003); 55.4 percent if the owner percentage is 44 percent (home purchase share for 2000); 54.6 percent if the owner percentage is 43 percent (home purchase share for 1998 and 2001); and 53.8 percent if the owner percentage is 42 percent (home purchase average from 1994–97). Considering a range of 13.5–16.0 for the MF mix and a range of 8.5–9.0 for the investor mortgage share, the low-mod market estimates reported in Table D.10 are: 55.6–57.1 percent if the owner percentage is 45 percent; 54.8–56.1 percent if the owner percentage is 44 percent; 54.0–55.3 percent if the owner percentage is 43 percent; and 53.1–54.5 percent if the owner percentage is 42 percent. If the low-mod percent is at its 1999–2003 average (44.4 percent), the market range is 54.3–56.9 percent. If the low- and moderate income percentage for home purchase loans fell to 38 percent—or five percentage points from its 1994–2003 average level of 43 percent—then the overall market estimate would be about 51 percent. Thus, 51 percent is consistent with a rather significant decline in the low-mod share of the single-family home purchase market. Under the baseline projection, the home purchase percentage can fall as low as 36 percent—about four-fifths of the 1994–2003 average—and the low- and moderate-income market share would still be 49 percent.

Table D.8b reported so-called "CBSA-based" low-mod shares for single-family owner loans that reflect the new 2000 Census data and the new OMB metropolitan area definitions. Since these differed slightly from the historical "MSA-based" low-mod shares, it is useful to repeat the above analysis in terms of these new data, which will serve as the basis for scoring the GSEs' performance under the new housing goals. As shown in

Table D.8b, the CBSA-based low-mod shares of home purchase loans averaged almost 44 percent between 1999 and 2003, suggesting an overall low-mod goal of 55.4 percent under the baseline, with a range from 54.8 percent to 56.1 percent. The CBSA-based measures of the low-mod share varied from approximately 42 percent (41.8 percent in 2001) to almost 46 percent (45.8 percent in 2003). Under baseline assumptions, an owner share of 42 percent translates into a 53.8 percent overall low-mod share while a 46 percent owner figure translates into a 57.0 percent low-mod share.

Case 2 (*see* Table D.9) considered a smaller low- and moderate-income percentage (85 percent) for both SF and MF rental properties, as compared with the baseline Case 1, which assumed 90 percent. Incorporating the Case 2 assumption reduces the low-mod market shares by about 1.3 percentage points. For example, if the SFO home purchase share is 45 percent, the overall low-mod market estimate is 54.9 percent under Case 2, as compared with 56.2 percent under Case 1 (*see* Table D.10). ICF considered a different option, as it reduced only the SF rental percentage from 90.0 percent to 87.5 percent. Since SF rental units account for about 10 percent of all financed units, this change reduces the overall low-mod market estimates by about 0.25 percentage points. As discussed earlier, the baseline Case 1 assumption of 90 percent is a reasonable approach for estimating the low-mod market shares.

Multifamily Mix. The volume of multifamily activity is also an important determinant of the size of the low- and moderate-income market. HUD is aware of the uncertainty surrounding projections of the multifamily market and consequently recognizes the need to conduct sensitivity analyses to determine the effects on the overall market estimate of different assumptions about the size of that market. Section C of this appendix provided HUD's rationale for its baseline MF mix of 15.0 percent and for its 13.5–16.0 percent range of MF mixes. Assuming a 13.5 percent multifamily mix reduces the overall low-mod market estimates by 0.6–0.7 percentage points compared with a 15 percent mix, and by 1.0–1.2 percentage points compared with a 16.0 percent mix. For example, when the low-mod share of the home purchase market is at 44 percent (its CBSA-based average for 1999–2003), the low-mod share of the overall market is 54.8 percent assuming a 13.5 percent multifamily mix, compared with 55.4 (56.8) percent assuming a 15 (16.0) percent multifamily mix.

As shown in Table D.10, ICF's MF mix of 14.2 percent produces results intermediate between HUD's 13.5 percent and 15.0 percent. Estimates of the low-mod market based on a MF mix of 14.2 percent are only 0.3–0.4 percentage points less than those based on a MF mix of 15.0 percent.

Fannie Mae's model combined an even lower MF mix of 12.3 percent with an investor mortgage share of 8.0 percent. If the low-mod share of home purchase loans is 44 percent (the average for 1999–2003), then the estimate for the overall low-mod market is 54.0 percent based on Fannie Mae's

assumptions. In contrast, HUD's estimates (with a MF mix of 15.0 percent and 8.5–9.0 percent investor share) are 55.4–55.7 percent—about one and a half percentage points higher. If the low-mod share of home purchase loans is 45 percent (which is below the CBSA-based percentage of 45.8 for 2003), then Fannie Mae's assumptions result in a market estimate of 54.8 percent while HUD's assumptions (see previous sentence) result in market estimates of 56.2–56.5 percent.

Investor Mortgage Share. As shown in Table D.10, increasing the investor mortgage share by one percentage point from 8.0 percent to 9.0 percent increases the low-mod market estimate by approximately 0.5–0.6 percentage point. If the 10.0 percent baseline from the 2004 proposed GSE rule were used in this analysis, the market estimates would be approximately 0.6 (0.4) percentage points higher relative to the results reported in Table D.10 for a baseline of 8.5 (9.0) percent.

Examples of Home Purchase Years. The above projection results for a home purchase environment can be compared with actual results for the two most recent home purchase years, 1999 and 2000, as well as results from earlier home purchase years (1995–1997). According to the Mortgage Bankers Association of America, the refinance rate was 21 percent in 1995, 29 percent in 1996 and 1997, 34 percent in 1999, and 29 percent in 2000.

For 1999, the baseline model assumed a multifamily mix of 16.0 percent (*see* Section C) and a mortgage investor share of 8.2 percent (*see* Section D). Under these assumptions, the 1999 market estimate is 56.9 percent; if the 1999 MF mix was lower— for example, 15.0 (14.0) percent instead of 16.0 percent—then the estimate of the 1999 low-mod market share would be 56.4 (55.9) percent.

The 2004 proposed rule (Table D.9 in Appendix D) reported a higher baseline market estimate for 1999 of 58.2 percent, as compared with the 56.9 percent reported in the previous paragraph. The difference is largely due to the treatment of single-family rental mortgages. For example, using the proposed rule's 10-percent assumption for the mortgage investor share (instead of the lower 8.2 percent HMDA-based mortgage investor shares reported in the text) would increase the 1999 estimate to 57.7 percent, only 0.5 percentage points lower than the 58.2 percent reported in the proposed rule. Other minor changes that lower the market estimate included: (a) Further reducing the SF mortgage investor share by excluding B&C investor loans from the HMDA data (*see* Section C); (b) using 1.6 percent (instead of 2.0 percent) for the mortgage share of single-family 2–4 property owners; and (c) using slightly lower dwelling-units-per-mortgage assumptions for SF 2–4 properties (2.20 instead of 2.25) and for SF investor mortgages (1.30 instead of 1.35).

The above changes also affect the 1995-to-1997 estimates reported in Table D.9 of Appendix D of the proposed rule for the three home purchase environments prior to 1999. These estimates were 57.3 percent for both 1995 and 1996 and 57.5 percent for

1997, with an average of 57.4 percent.[44] Given (a)–(c) in the previous paragraph and the fact that the HMDA-reported mortgage investor share was approximately eight percent during these three years (instead of the assumed 10 percent), these estimates should be reduced by about one percentage point, placing their average at 56.4. Allowing for a multifamily mix of three percentage points below the baseline estimates (similar to the approach used for 1999 and 2000 above) would drop the 1995–1997 low-mod estimates by approximately 1.4 percentage points.[45] Thus, the 1995–1997 average would range from about 55.0 percent (with a MF mix of three percentage points below the baseline estimate) to 56.4 percent (with the baseline MF mix).[46]

For 2000, the baseline model assumed a multifamily mix of 17.2 percent and a mortgage investor share of 9.1 percent. Under these assumptions, the 2000 low-mod market is estimated to be 57.9 percent. A lower MF mix—for example, 16.0 (15.0) percent instead of 17.2 percent—would reduce the estimated 2000 low-mod market share to 57.4 (57.0) percent. The baseline 57.9 percent estimate for 2000 is about one percentage point lower than the 59.1 percent share reported in Table D.9 of the proposed rule, mainly for the reasons discussed in the previous paragraph.

The above market estimates for 1999 and 2000 are slightly lower if the projected CBSA data are used instead of the historical 1990-based MSA data. The projected CBSA-based low-mod estimate was 56.2 percent for 1999, or 0.7 percentage points lower than the 56.9 percent estimate based on the historical MSA data. In this case, the low-mod estimate falls to 55.8 (55.4) percent if the MF mix is 15.0 (14.0) percent. Incorporating the CBSA data lowered the estimate for 2000 by 0.5 percentage points to 57.4 percent, and to 56.9 (56.5) percent if the MF mix is 16.0 (15.0) percent.

To summarize, the historical MSA-based low-mod share for all recent home purchase environments (1995–97 and 1999–2000) averaged from 55.6 percent (with a two- to three-percentage point lower MF mix than the baseline) to 56.8 percent (with the baseline MF mix). The averages (56.5 to 57.4) for the two most recent home purchase years,

1999 and 2000, were higher than those (55.0 to 56.4) for the earlier home purchase years, 1995–1997. When the data are expressed on a CBSA basis, the average low-mod shares for 1999 and 2000 decline slightly to 56.0 percent (with a two-percentage point lower MF mix than the baseline) and to 56.8 percent (with the baseline MF mix).

By comparison, ICF's best (lower bound) estimates for these home purchase years were 52 (49) percent for 1996, 55 (52–53) percent for 1997 and 1999, 56 (53) percent for 1995, and 57 (54) percent for 2000 (ICF Appendix, p. 66). Emphasizing the variability of these estimates, ICF also reported numerous other low-mod shares for these years, based on various simulations and assumptions. Some seem rather strange, or suggested that their analysis simply reduced the various input parameters to show that low estimates of the low-mod market could be the output. For example, ICF reports an overall market share of 46.9 percent share for 2000 (p. 66), which is about the same as the HMDA-reported single-family-owner percentage of 47.0 percent for 2000 (Table D.8a); it is difficult to imagine what scenario would result in the low-mod share of the rental market being in the less-than-fifty-percent range (although it is recognized that ICF was probably using an owner share less than 47 percent). ICF's report is full of such low estimates (*e.g.*, 46.4 percent for 1996 on page 67, another 49.6 percent for 2000 on page 61) without any attempt to justify them, other than to argue that everything is variable and possible—an approach that is not very convincing if it produces a 46.9 percent low-mod share for the year 2000.

Heavy Refinancing Environments. The low-mod share of the market will decline during a period of heavy refinancing due to (a) a decline in the low-mod share of single-family refinance mortgages as middle- and upper-income borrowers dominate the refinance market; (b) a decline in the relative importance of the subprime market; and (c) a decline in the share of multifamily mortgages. For example, during 2002, the refinance share of low-mod loans was 41.8 percent (compared with 47–51 percent during the two home purchase years of 1999 and 2000); the subprime share of the single-family market was 8.6 percent (compared with 13 percent during 1999 and 2000); and the multifamily share of the market was 11 percent or less (compared with 16 percent or more during 1999 and 2000). Although there is some uncertainty with the data, the multifamily mix for 2003 could have been as low as 6 or 7 percent.

Table D.11 shows the impact on the low-mod market share under different assumptions about a refinancing environment. The table reports the results for a 65 percent refinance environment, which has been characteristic of recent (2002 and 2003) refinance waves. Refinancing environments are characterized by lower MF mixes because single owner properties dominate the market; therefore Table D.11 considers MF mixes from 6 to 12 percent. Most likely, a MF mix of 12–13 percent characterized 2001, 9–11 percent characterized 2002, and less than 7 percent characterized 2003; there is some uncertainty

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[44] These three estimates were initially reported in HUD's Final Rule, and repeated in Table D.9 of Appendix D of the 2004 proposed GSE rule.

[45] Given that the midpoints of the multifamily mixes for 1995–1997 are in the high 18–20 percent range (*see* Table D.5b), three percentage points were dropped in the sensitivity analysis.

[46] To provide some confirmation for these 1995–1997 estimates, HUD went back and re-estimated the model for 1997. As shown in Table D.9 of the 2004 GSE Proposed Rule (as well as in Table D.15 of the 2000 GSE Rule), HUD had earlier estimated a low-mod share of 57.5 percent for 1997 (which was about the same as the 57.3-percent low-mod share estimated for 1995 and 1996). With a lower investor share (8.4 percent instead of 10.0 percent) and other changes mentioned in the text, the new estimate for the 1997 low-mod market was 56.4 assuming a multifamily mix of 19.3 percent. If the multifamily mix is reduced to 17.3 (16.3) percent, the low-mod share of the 1997 market is 55.5 (55.0) percent. The 55.0–56.4 percent range for 1997 is the same as the range reported in the text for 1995–1997.

with these estimates, as discussed in Section C of this appendix. In a refinancing wave, the low-mod percent is typically lower for refinance loans than home purchase loans, as middle- and high-income borrowers take advantage of reduced interest rates. With respect to the low-mod characteristics of SF owner loans, two scenarios were considered: (A) Scenario A represents the average low-mod percentages for the last four refinance years (1998, 2001, 2002, and 2003)—43 percent for home purchase loans and 40 percent for refinance loans; and (B) Scenario B represents the average low-mod percentages for the two most recent refinance years (2002, and 2003)—44.5 percent for home purchase loans and 40.5 percent for refinance loans. Thus, there is a 3–4 percentage point differential between home purchase loans and refinance loans in a heavy refinancing environment. This analysis assumed an investor mortgage share of 8.0 percent (average for these refinancing years) and a subprime market share of 8.5 percent (instead of the 12-percent assumption in the baseline model).

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Table D.11

Market Estimates for Refinance Environments

Multifamily Mix	Low-Mod		Underserved Areas (2000-Geography)		Special Affordable		SF Rental Share of All Units (Percent)
	Scenario A	Scenario B	Scenario A	Scenario B	Scenario A	Scenario B	
12	51.6	52.3	36.0	35.8	24.1	24.1	22.4
11	51.1	51.8	35.8	35.5	23.7	23.7	21.5
10	50.7	51.4	35.5	35.3	23.3	23.3	20.6
9	50.2	50.9	35.2	35.0	22.9	22.9	22.0
8	49.8	50.5	35.0	34.7	22.5	22.5	18.9
7	49.3	50.0	34.7	34.4	22.1	22.1	18.0
6	48.9	49.6	34.4	34.2	21.7	21.7	17.1

Note: See text for definition of Scenarios A and B.

Under Scenario A, the low-mod shares varied by approximately three percentage points, from 51.6 percent with a 12 percent MF mix to 48.9 percent with a 6 percent MF mix. Under Scenario B, the low-mod percentages are all 0.7 percent higher, and the pattern is from 52.3 percent with a MF mix of 12 percent to 49.6 percent with a MF mix of 6 percent. Notice that under Scenario B, the low-mod share remains in the 50–51 percent range even if the MF mix falls to 6–8 percent. These low-mod market shares are 4–7 percentage points lower than the low-mod shares reported in Table D.10 for HUD's baseline home purchase environment. In addition to higher-income borrowers dominating the single-family market, the share of the "goals rich" rental market declines in a refinancing wave, which tends to further reduce the low-mod share of market activity. The right-hand column of Table D.11 shows that the rental share falls to the 17–22 percent range, or 4–9 percentage points less that the almost 26-percent rental share in HUD's baseline model.

Model estimates were also made for the recent refinancing years of 1998, 2001, 2002, and 2003. The Mortgage Bankers Association of America estimated that the refinance rate was 50 percent in 1998, 55 percent in 2001, 59 percent in 2002, and 66 percent in 2003. The year 2003 stands out not only for its high rate of refinancing but also for the sheer volume of refinancing ($2.5 trillion), which led to record single-family mortgage originations ($3.8 trillion) that year.

For 1998, the baseline model assumed a multifamily mix of 14.0 percent (*see* Section C) and a mortgage investor share of 6.8 percent (*see* Section D). Under these assumptions, the 1998 market estimate is 51.9 percent. If the MF mix for 1998 had been 13.0 (12.0) percent, instead of the baseline of 14.0 percent, then the estimated low-mod market share for 1998 would be 51.3 (50.8) percent. For 2001, the baseline model assumed a multifamily mix of 13.5 percent and a mortgage investor share of 7.8 percent. Under these assumptions, the 2001 market estimate is 53.4 percent. If the MF mix for 2001 had been 12.5 (12.0) percent, instead of the baseline of 13.5 percent, then the estimated low-mod market share for 2001 would be 52.9 (52.7) percent. For 2002, the baseline model assumed a multifamily mix of slightly over 11.0 percent and a mortgage investor share of 7.8 percent. Under these assumptions, the 2002 low-mod market is estimated to be 53.2 percent.[47] A lower MF mix—for example, 10.5 (9.5) percent instead

[47] The baseline estimates for 1998 (51.9 percent), 2001 (53.4 percent) and 2002 (53.2 percent) are lower than those (53.8 percent, 54.9 percent and 54.1 percent, respectively) reported in Table D.9 of Appendix D of the proposed rule. As explained earlier, the differences between the results in the proposed rule and this Final Rule are mainly due to the treatment of single-family rental mortgages. (In addition, the SF owner percentages for 2002 were also lowered by approximately 0.5 percentage point in the Final Rule.) Notice that in 1998, the investor mortgage share dropped to 6.8 percent, or 3.2 percentage points lower than that assumed in the proposed rule; this differential accounts for the reduction of 1.9 percentage points (53.8 percent to 51.9 percent) in the low-mod market estimate for 1998.

of 11 percent—would reduce the estimated 2002 low-mod market share to 53.1 (52.5) percent.

Using the projected CBSA data (instead of the historical 1990-based MSA data) lowered the 2001 and 2002 low-mod estimates by approximately one percentage point. The 2001 market estimates are reduced to 52.3 percent (13.5 MF mix), 51.8 percent (12.5 MF mix), and 51.6 percent (12.0 MF mix). The 2002 market estimates are reduced to 52.1 percent (11.1 MF mix), 52.0 (10.5 MF mix), and 51.4 percent (9.5 MF mix).

By comparison, ICF's best estimates for these refinancing years are one or two percentage points lower than the above estimates: 49.7 percent for 1998, 51.1 percent for 2001, and 50.9 percent for 2002; because of the unavailability of 2003 HMDA data, no estimate was provided by ICF for that year. (*See* ICF Appendix, p. 60). ICF's lower bound estimates for these three years were in the 47–48 percent range. But as noted earlier, ICF also produces a number of even lower estimates without discussion of what circumstances might lead to them—examples include their 45.2 percent market estimate for 2001 when the SFO low-mod share was 42.3 percent (*see* Table D.8a) and their 44.9 percent estimate for 2002 when the SFO low-mod share was 42.7 percent. (*See* ICF Appendix, p. 66.)

For the years 1999 to 2002, Fannie Mae estimated a low-mod market share of 52–53 percent. (This is their estimate assuming no missing data; see their Table I.9, page I–34.) This compares with HUD's estimate of 53.7 percent to 54.5 percent. As discussed in Section C.6, Fannie Mae assumes a rather low MF mix (approximately 10 percent) in the model that generates its historical estimates.

Given that HUD did not receive 2003 HMDA data until August 2004, it was not possible to develop a complete projection model for 2003. Still, HUD developed some rough projections for 2003. Given the huge volume of single-family originations ($3.8 trillion), the 1998 MF mix was likely rather low. In fact, Fannie Mae estimates the MF mix dropped to five percent in 2003. Thus, the estimates of the low-mod market share for 2003 are presented for different assumptions about the MF mix, recognizing that firm data on the 2003 multifamily market are not available. Combining an investor mortgage share of 8.2 from HMDA (from HMDA) with different MF mixes produces the following estimates: 51.9 percent (MF mix of 8 percent); 51.4 percent (MF mix of 7 percent); and 51.0 percent (MF mix of 6.0 percent).

As shown by both the simulation results and by the actual experience during 1998 and 2001–2003, the low-mod share declines when refinances dominate the mortgage market. The above estimates place the low-mod average during these four years of heavy refinancing at 52 percent, with practically all of the estimates of annual low-mod shares varying between 51 and 53 percent. As noted above, the estimates for 2003 (around 51 percent) are somewhat speculative.

The various market estimates presented in Table D.10 for a home purchase environment and reported above for a refinance environment are not all equally likely. Most

of them equal or exceed 51 percent. In the home purchase environment, estimates below 51 percent would require the low-mod share of the single-family-owner market for home purchase loans to drop to 38 percent, which would be five percentage points below the 1994–2003 average of 43 percent. Thus, 51 percent is consistent with a rather significant decline in the low-mod share of the single-family home purchase market. Sensitivity analyses of different refinance environments and model estimates for 1998, and 2001–2003 suggest that it would require a particularly heavy period of refinancing to fall below a 51-percent low-mod market share.

b. Economic Conditions and the Feasibility of the Low- and Moderate-Income Housing Goal

Commenters expressed a general concern that the market share estimates and the housing goals failed to recognize the volatility of housing markets and the existence of macroeconomic cycles. There was particular concern that the market shares and housing goals were based on a period of economic expansion accompanied by record low interest rates and high housing affordability. This section continues the discussion of these issues, noting that the Secretary can consider shifts in economic conditions when evaluating the performance of the GSEs on the goals, and noting further that the market share estimates can be examined in terms of less favorable market conditions than have existed during the 1993 to 2003 period. As also explained below, HUD is publishing in the **Federal Register** an Advance Notice of Proposed Rulemaking that advises the public of HUD's intention to consider by separate rulemaking a provision that recognizes and takes into consideration the impact of high volumes of refinance transactions on the GSEs' ability to achieve the housing goals in certain years, and solicits proposals on how such a provision should be structured and implemented.

Volatility of the Market. Changing economic conditions can affect the validity of HUD's market estimates as well as the feasibility of the GSEs' accomplishing the housing goals. The volatile nature of the mortgage market in the past few years suggests a degree of uncertainty around projections of the origination market. Large swings in refinancing, consumers switching between adjustable-rate mortgages and fixed-rate mortgages, and increased first-time homebuyer activity due to record low interest rates, have all characterized the mortgage market during the nineties. These conditions are beyond the control of the GSEs but they would affect their performance on the housing goals. A mortgage market dominated by heavy refinancing on the part of middle-income homeowners would reduce the GSEs' ability to reach a specific target on the Low- and Moderate-Income Goal, for example. A jump in interest rates would reduce the availability of very-low-income mortgages for the GSEs to purchase. But on the other hand, the next few years may be favorable to achieving the goals because of the high refinancing activity in 2001, 2002, and 2003. A period of low-to-moderate interest rates would sustain affordability levels without causing the rush to refinance seen earlier in

1998 and 2001–2003. A high percentage of potential refinancers have already done so, and are less likely to do so again. However, these same predictions were made after the 1998 refinance wave, which indicates the uncertainty of making predictions about the mortgage market.

Recent years have been characterized by record affordability conditions due to low interest rates and economic expansion. Thus, as Section F.3.a indicates, HUD also examined potential changes in the market shares under very different macroeconomic environments, including periods of recession, high interest rates, and heavy refinancing (accompanied by low interest rates). A recessionary environment would likely be characterized by a reduction in single-family activity (or an increase in the multifamily share of the market) and a reduction in the low-mod shares of the single-family-owner market. The home purchase percentage can fall as low as 36 percent—about four-fifths of the 1994–2003 average—and the low- and moderate-income market share would still be 49 percent. If the low-mod share of the owner market were reduced more modestly to 39 percent, the low-mod share for the overall market would fall to 51.5 percent, assuming a multifamily mix of 15.0 percent. (*See* Table D.10.)

As discussed in Appendix A, record low interest rates, a more diverse socioeconomic group of households seeking homeownership, and affordability initiatives of the private sector have encouraged first-time buyers and low-income borrowers to enter the market since the mid-1990s. Over the past eight years, the affordable lending market has demonstrated an underlying strength that suggests it will continue, particularly given demographic projections of increased minorities and immigrants in the mortgage market. However, a significant increase in interest rates over recent levels would reduce the presence of low-income families in the mortgage market and the availability of low-income mortgages for purchase by the GSEs. As noted above, the 51–56 percent range for the low-mod market share covers economic and market affordability conditions much less favorable than recent conditions of low interest rates and economic expansion. The low-mod share of the single-family home purchase market could fall to 38 percent, which is five percentage points lower than its 1995–2003 average level of 43 percent, and the low-mod market share would only be slightly below 51 percent. The above analysis of 1998 and the 2001–2003 period suggests that 51 percent is a reasonable minimum low-mod share for years of heavy refinancing.

Feasibility Determination. As stated in the 2000 Rule, HUD is well aware of the volatility of mortgage markets and the possible impacts on the GSEs' ability to meet the housing goals. FHEFSSA allows for changing market conditions.[48] If HUD has set a goal for a given year and market conditions change dramatically during or prior to the year, making it infeasible for the GSE to attain the goal, HUD must determine "whether (taking into consideration market

and economic conditions and the financial condition of the enterprise) the achievement of the housing goal was or is feasible." This provision of FHEFSSA clearly allows for a finding by HUD that a goal was not feasible due to market conditions, and no subsequent actions would be taken. As HUD noted in both the 1995 and 2000 GSE Rules, it does not set the housing goals so that they can be met even under the worst of circumstances. Rather, as explained above, HUD has conducted numerous sensitivity analyses for economic and market affordability environments much more adverse than has existed in recent years. If macroeconomic conditions change even more dramatically, the levels of the goals can be revised to reflect the changed conditions. FHEFSSA and HUD recognize that conditions could change in ways that require revised expectations.

HUD received a number of public comments seeking a regulatory solution to the issue of the ability of the GSEs to meet the housing goals during a period when refinances of home mortgages constitute an unusually large share of the mortgage market. As explained in the Preamble, HUD is not addressing the refinance issue in this final rule. Elsewhere in this **Federal Register**, HUD is publishing an Advance Notice of Proposed Rulemaking that advises the public of HUD's intention to consider by separate rulemaking a provision that recognizes and takes into consideration the impact of high volumes of refinance transactions on the GSEs' ability to achieve the housing goals in certain years, and solicits proposals on how such a provision should be structured and implemented. HUD believes that it would benefit from further consideration and additional public input on this issue. HUD also notes (*see* above) that FHEFSSA provides a mechanism by which HUD can take into consideration market and economic conditions that may make the achievement of housing goals infeasible in a given year. (*See* 12 U.S.C. 1336(b)(e).)

c. Treatment of B&C Loans and Other Technical Market Issues

B&C Mortgages. As discussed in Appendix A, the market for subprime mortgages has experienced rapid growth over the past 6–7 years, rising from an estimated $65 billion in 1995 to $174 billion in 2001, $213 billion in 2002 and $332 billion in 2003.[49] In terms of credit risk, subprime loans include a wide range of mortgage types. "A-minus" loans, which represent at least half of the subprime market, make up the least risky category.[50]

As discussed in Appendix A, the GSEs are involved in this market both through specific program offerings and through purchases of securities backed by subprime loans (including B&C loans as well as A-minus loans). The B&C loans experience much higher delinquency rates than A-minus loans.[51]

The market estimates reported in Section F.3.a–b exclude the B&C portion of the subprime market; or conversely, they include the A-minus portion of the subprime market. This section explains how these "adjusted" market shares are calculated from "unadjusted" market shares that include B&C loans.

There are two possible approaches for adjusting for the effects of B&C owner loans in the projection model. *First,* readers could choose a single-family low-mod percentage (that is, one of the percentages in the first column in Table D.10) that they believe is adjusted for B&C loans and then obtain a rough estimate of the overall market estimate from the second to fourth columns corresponding to different multifamily mixes. For instance, if one believes the appropriate single-family-owner percentage adjusted for B&C loans (or adjusted for any other market sectors that the reader thinks appropriate) is 44 percent, then the low-mod market estimate is 55.4 percent assuming a multifamily mix of 15 percent. While intuitively appealing, such an approach would provide inaccurate results, as explained next.

Second, readers could choose a single-family-owner percentage directly from HMDA data that is unadjusted for B&C loans and then rely on HUD's methodology (described below) for excluding the effects of B&C loans. This is the approach taken in Table D.10. The advantage of the second approach is that HUD's methodology makes the appropriate adjustments to the various property shares (*i.e.,* the owner versus rental percentages) that result from excluding single-family B&C loans from the analysis. According to HUD's methodology, dropping B&C loans would reduce the various low-mod market estimates by less than half of a

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[48] Section 1336(b)(3)(A).

[49] Estimates of the subprime market for all years since 1995 are as follows (dollar and market share): 1995 ($65 billion, 10 percent); 1996 ($96.5 billion, 12.3 percent); 1997 ($125 billion, 15 percent); 1998 ($150 billion, 10 percent; 1999 ($160 billion, 12.5 percent); 2000 ($138 billion, 12.1 percent); 2001 ($174 billion, 8.5 percent); 2002 ($213 billion, 8.6 percent), and 2003 ($332 billion, 8.7 percent). The uncertainty about what these various estimates include should be emphasized; for example, they may include second mortgages and home equity loans as well as first mortgages, which are the focus of this analysis. The source for these estimates is *Inside Mortgage Finance* (various years).

[50] The one-half assumption for A-minus loans is conservative because it probably underestimates

(overestimates) the share of A-minus (B&C) loans. According to data obtained by the Mortgage Information Corporation (*see* next footnote), 57 percent of all subprime loans were labeled A-minus (as of September 30, 2000). According to *Inside B&C Lending,* which is published by Inside Mortgage Finance, the A-minus share of the subprime market was 61.6 percent in 2000, 70.7 percent in 2001 (see March 11, 2002 issue), 75 percent in 2002 (see the September 15, 2003 issue), and 82 percent during the first nine months of 2003 (see the December 8, 2003 issue). A more recent analysis by Inside Mortgage Finance found that 81.4 percent of subprime loans originated during the first quarter of 2002 were A-minus or better (see *Inside B&C Lending,* Vol. 9, Issue 12, June 14, 2004).

[51] The Mortgage Information Corporation (MIC) reports the following serious delinquency rates (either 90 days past due or in foreclosure) by type of subprime loan: 3.36 percent for A-minus; 6.67 percent for B; 9.22 percent for C; and 21.03 percent for D. The D category accounted for only 2 percent of subprime loans and of course, is included in the "B&C" category referred to in this appendix. By comparison, MIC reports a seriously delinquent rate of 3.63 percent for FHA loans. *See* MIC, *The Market Pulse,* Winter 2001, page 6.

percentage point. This minor effect is due to (a) the fact that the low-mod share of B&C loans is similar to that of the overall market; and (b) the offsetting effects of the increase in the rental market share when single-family B&C loans are dropped from the market totals.

As noted above, if one assumes the single-family-owner percentages in the first column of Table D.10 are unadjusted for B&C loans, then the overall low-mod market estimates must be adjusted to exclude these loans. The effects of deducting the B&C loans from the projection model can be illustrated using an example of a low-mod percentage of 44 percent for single-family-owner loans. Again, as explained earlier, this 44 percent figure could reflect a mortgage market environment where home purchase and refinance loans had similar low-mod percentages (*i.e.*, 44 percent) or a mortgage market environment where home purchase and refinance loans had different low-mod market percentages that together resulted in a 44 percent average for the single-family-owner market.

As Table D.10 shows, a 44 percent low-mod share for owner mortgages translates into an overall low-mod market share of 55.4 percent. It is assumed that the subprime market accounts for 12 percent of all mortgages originated, which would be $204 billion based on $1,700 billion for the mortgage market. This $204 billion estimate for the subprime market is reduced by 20 percent to arrive at $163.2 billion for subprime loans that will be less than the conforming loan limit. Dividing this figure by the average loan amount for subprime loans gives 1,256,361 subprime loans in the conventional market. HMDA data indicate that six percent of these are SF investor loans (75,382) and the remaining ones are SF owner loans (1,180,979). Since this analysis retains half of subprime loans (*i.e.*, the A-minus portion of that market), these figures are reduced by one-half to arrive at 590,489 owner B&C loans and 37,691 investor B&C loans. The investor loans are placed on a unit basis by multiplying by 1.3 (units per mortgage), yielding 48,998 financed dwelling units in the investor B&C market.

HMDA data was used to provide an estimate of the portion of the 590,489 owner B&C loans that would qualify for each of the housing goals. HMDA data does not identify subprime loans, much less divide them into their A-minus and B&C components. As explained in Appendix A, Randall Scheessele in HUD's Office of Policy Development and Research has identified almost 200 HMDA reporters that primarily originate subprime loans. Based on 1999–2002 HMDA data, the goals-qualifying percentages of loans originated by these subprime lenders were as follows: 58.6 percent qualified for the low-mod goal, 28.0 percent for the special affordable goal, and 52.0 percent for the underserved areas goal.[52]

Applying the goals-qualifying percentages to the 590,489 owner B&C loans gives the following estimates of B&C owner loans that qualified for each of the housing goals: Low-mod (346,027), special affordable (165,337), and underserved areas 614,109. The process for the smaller number (48,998) of investor B&C loans is similar. It is assumed that 90 percent (44,098) of these B&C rental units qualify for the low-mod goal, 58 percent (28,419) qualify for the special affordable goal, and 74 percent (36,259) qualify for the underserved areas goal (based on 2000 Census data).

Adjusting HUD's model to exclude B&C owner loans and B&C financed rental units involves subtracting the above eight figures—two for the overall owner and rental B&C market and six for B&C owner units and rental units that qualify for each of the three housing goals—from the corresponding figures estimated by HUD for the total single-family and multifamily market inclusive of B&C owner loans and B&C dwelling units. HUD's model projects that 10,478,681 single-family and multifamily market will be financed; of these, 5,842,313 (55.8 percent) qualified for the low-mod goal, 2,801,179 (26.7 percent) for the special affordable goal, and 3,983,005 (38.0 percent) for the underserved areas goal. Deducting the B&C owner and rental market estimates produces the following adjusted market estimates: A total market of 9,839,193, of which 5,452,188 (55.4 percent) qualified for the low-mod goal, 2,607,423 (26.5 percent) for the special affordable goal, and 3,639,692 (37.0 percent) for the 2000-based underserved areas goal.

The low-mod market share estimate exclusive of B&C loans (55.4 percent) is only slightly lower than the original market estimate (55.8 percent from above), as is also the special affordable market estimate (26.7 percent versus 26.5 percent). This occurs because the B&C owner loans that were dropped from the analysis have similar low-mod and special affordable percentages as the overall (both single-family and multifamily) market. For example, the low-mod share of B&C loans was projected to be 58.6 percent and HUD's market model (unadjusted for B&C loans) projected the overall low-mod share to be practically the same, 55.8 percent. Thus, dropping B&C owner loans from the market totals does not significantly reduce the overall low-mod share of the market. Because they qualify at such a high rate (*e.g.*, 90 percent on low-mod), dropping B&C rental loans tends to reduce the market share estimates. However, they are relatively small in number—B&C owner loans dominate the results because they account for 92.3 percent (590,489 divided by 639,487) of the total B&C owner and rental units dropped from the market totals.

The situation is different for the underserved areas goal. Underserved areas account for 52.0 percent of the B&C owner loans, which is a higher percentage than the underserved area share of the overall market (38.0 percent). Thus, dropping the B&C

owner loans (as well as the smaller number of B&C rental units) leads to a reduction in the underserved areas market share of 1.0 percentage points, from 38.0 percent to 37.0 percent. (If this analysis were conducted in terms of 1990-Census data, the one-percentage point reduction would be from about 33.0 percent to 32.0 percent.)

Dropping B&C loans from HUD's projection model changes the mix between rental and owner units in the final market estimate; rental units accounted for 26.7 percent of total units after dropping B&C loans compared with 25.6 percent before dropping B&C loans. Since practically all rental units qualify for the low-mod goal, their increased importance in the market partially offsets the negative effects on the goals-qualifying shares of any reductions in B&C owner loans. Thus, another way of explaining why the goals-qualifying market shares are not affected so much by dropping B&C owner loans is that the rental share of the overall market increases as the B&C owner units are dropped from the market. Since rental units have very high goals-qualifying percentages, their increased importance in the market partially offsets the negative effects on the goals-qualifying shares of any reductions in B&C owner loans. In fact, this rental mix effect would come into play with any reduction in owner units from HUD's model.

A similar analysis can be used to demonstrate the effects of deducting the remaining, A-minus portion of the subprime market from the market estimates. Of course, deducting A-minus loans as well as B&C loans is equivalent to deducting all subprime loans from the market. In the example given above (44 percent low-mod percentage for owners), deducting all subprime loans would further reduce the overall low-mod market estimate to 55.0 percent. Thus, the unadjusted low-mod market estimate is 55.8 percent, the estimate adjusted for B&C loans is 55.4 percent (reported in Table D.10), and the estimate adjusted for all subprime loans is 55.0 percent.

As discussed in the 2000 Rule, there are caveats that should be mentioned concerning the above adjustments for the B&C market. The adjustment for B&C loans depends on several estimates relating to the single-family mortgage market, derived from various sources. Different estimates of the size of the B&C market or the goals-qualifying shares of the B&C market could lead to different estimates of the goals-qualifying shares for the overall market. The goals-qualifying shares of the B&C market were based on HMDA data for selected lenders that primarily originate subprime loans; since these lenders are likely originating both A-minus and B&C loans, the goals-qualifying percentages used here may not be accurately measuring the goals-qualifying percentages for only B&C loans. The above technique of dropping B&C loans also assumes that the coverage of B&C and non-B&C loans in HMDA's metropolitan area data is the same; however, it is likely that HMDA coverage of non-B&C loans is higher than its coverage of B&C loans.[53] Despite these caveats, it also

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[52] The goals-qualifying percentages for subprime lenders are much higher than the percentages for the overall single-family conventional conforming market; for example, the 1999–2003 average low-mod percentage for all single-family owner loans was 44 percent. For further analysis of subprime lenders, see Randall M. Scheessele, *1998 HMDA Highlights,* Housing Finance Working Paper No.

HF–009. Office of Policy Development and Research, U.S. Department of Housing and Urban Development, October 1999.

[53] Dropping B&C loans in the manner described in the text results in the goals-qualifying

Continued

appears that reasonably different estimates of the various market parameters would not likely change, in any significant way, the above estimates of the effects of excluding B&C loans in calculating the goals-qualifying shares of the market. As discussed in other sections, HUD provides a range of estimates for the goals-qualifying market shares to account for uncertainty related to the various parameters included in its projection model for the mortgage market.

Manufactured Housing Loans and Small Loans. HUD includes the effects of manufactured housing loans (at least those financing properties in metropolitan areas) in its market estimates. However, sensitivity analyses are conducted to determine the effects of excluding these loans. Excluding manufactured housing loans as well as small loans (loans less than $15,000) reduces the overall market estimates reported in Table D.10 by about one percentage point. This is estimated as follows. First, excluding these loans reduces the low-mod percentage for single-family-owner mortgages in metropolitan areas by about 1.9 percentage points, based on analysis of recent home purchase environments (1995–97 and 1999 and 2000). Multiplying this 1.9 percentage point differential by the property share (0.745) of single-family-owner units yields 1.4 percentage points, which serves as a proxy for the reduction in the overall low-mod market share due to dropping manufactured home loans from the market analysis. The actual reduction will be somewhat less because dropping manufactured home loans will increase the share of rental units, which increases the overall low-mod market share, thus partially offsetting the 1.4 percent reduction. The net effect is probably a reduction of about one percentage point.

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percentages for the non-B&C market being underestimated since HMDA coverage of B&C loans is less than that of non-B&C loans and since B&C loans have higher goals-qualifying shares than non-B&C loans. For instance, the low-mod shares of the market reported in the text underestimate (to an unknown extent) the low-mod shares of the market inclusive of B&C loans; so reducing the low-mod owner shares by dropping B&C loans in the manner described in the text would provide an underestimate of the low-mod share of the non-B&C owner market. A study of 1997 HMDA data in Durham County, North Carolina by the Coalition for Responsible Lending (CRL) found that loans by mortgage and finance companies are often not reported to HMDA. For a summary of this study, see "Renewed Attack on Predatory Subprime Lenders" in *Fair Lending/CRA Compass,* June 9, 1999.

The effects can be considered separately. Dropping only manufactured housing loans would reduce the market estimates by approximately three-quarters of a percentage point. ICF argued that loans with less than $15,000 should be excluded. The impact of doing this on the market estimates would be less than half a percentage point. ICF also considered scenarios where one-half of manufactured loans would be dropped, as well as small loans less than $15,000. The impact of doing this on the market estimates would be less than three-quarters of a percentage point.

The estimated reductions in goals-qualifying shares due to excluding manufactured housing would be even lower during the heavy refinance years such as 1998 and 2001–2003. It should also be mentioned that manufactured housing in non-metropolitan areas is not included in HUD's analysis due to lack of data; including that segment of the market would increase the goals-qualifying shares of the overall market. Thus, the analyses of manufactured housing reported above and throughout the this final rule pertain only to manufactured housing loans in metropolitan areas, as measured by loans originated by the 21 manufactured housing lenders identified by Randy Scheessele at HUD.

The above analyses of the effects of less affordable market conditions, different assumptions about the size of the rental market, and dropping different categories of loans from the market definition suggest that 51–56 percent is a reasonable range of estimates for the low- and moderate-income market. This range covers markets without B&C and allows for market environments that would be much less affordable than recent market conditions. The next section presents additional analyses related to market volatility and affordability conditions.

d. Conclusions About the Size of Low- and Moderate-Income Market

Based on the above findings as well as numerous sensitivity analyses, HUD concludes that 51–56 percent is a reasonable range of estimates of the mortgage market's low- and moderate-income share for the year 2005 and beyond. The range covers much more adverse economic and market affordability conditions than have existed recently, allows for different assumptions about the single-family and multifamily rental markets, and excludes the effects of B&C loans. HUD recognizes that shifts in economic conditions and refinancing could

increase or decrease the size of the low- and moderate-income market during that period.

G. Size of the Conventional Conforming Market Serving Central Cities, Rural Areas, and Other Underserved Areas

The following discussion presents estimates of the size of the conventional conforming market for the Central City, Rural Areas, and other Underserved Areas Goal; this housing goal will also be referred to as the Underserved Areas Goal. The first three sections, which analyze historical data going back to the early 1990's, necessarily used 1990 Census geography to define underserved census tracts and underserved counties. The first two sections focus on underserved census tracts in metropolitan areas, as Section 1 presents underserved area percentages for different property types while Section 2 presents market estimates for metropolitan areas. Section 3 discusses B&C loans and rural areas. But as explained in Appendix B, HUD will be defining underserved areas based on 2000 Census geography beginning in 2005, the first year covered by this final rule. Therefore, Section 4 repeats much of the analyses in Sections 1–3 but in terms of 2000 Census geography, rather than 1990 Census geography

1. Underserved Areas Goal Shares by Property Type

For purposes of the Underserved Areas Goal, underserved areas in metropolitan areas are defined as census tracts with:

(a) Tract median income at or below 90 percent of the MSA median income; or

(b) A minority composition equal to 30 percent or more and a tract median income no more than 120 percent of MSA median income.

Owner Mortgages. The first set of numbers in Table D.12 are the percentages of single-family-owner mortgages that financed properties located in underserved census tracts of metropolitan areas between 1992 and 2003. There are several interesting patterns in these data. During 1999 and 2000, 28–30 percent of mortgages (both home purchase and refinance loans) financed properties located in these areas; this percentage fell to 25.7 percent in 2001, 25.0 percent in 2002, and 25.3 percent in 2003, figures that were slightly below the average (26.8 percent) between 1994 and 1998. In 1992 and 1993, the underserved areas share of single-family-owner mortgages was only 20 percent.

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Table D.12

Underserved Area Share of Mortgage Market In Metropolitan Areas:
1992-2003 HMDA Data

Single-Family-Owner	Purchase		Refinance		Total	
	Conforming Market	Market W/O B&C Loans	Conforming Market	Market W/O B&C Loans	Conforming Market	Market W/O B&C Loans
1992	22.2 %	22.2 %	20.1 %	20.0 %	20.8 %	20.7 %
1993	21.9	21.9	19.5	19.4	20.2	20.1
1994	24.4	24.3	27.5	26.9	25.8	25.5
1995	25.5	25.4	29.3	28.3	26.9	26.4
1996	25.0	24.9	28.7	27.4	26.7	26.0
1997	25.0	24.8	30.7	28.8	27.7	26.6
1998	24.6	24.2	24.9	23.4	24.8	23.7
1999	25.8	25.2	30.4	28.5	28.2	26.9
2000	27.0	26.2	35.1	33.1	30.1	28.7
2001	25.8	25.2	25.6	24.7	25.7	24.9
2002	27.1	26.3	24.2	23.5	25.0	24.2
2003	28.5	27.6	24.4	23.6	25.3	24.5
Non-Owner						
1992					42.4	
1993	39.3	39.2	41.1	40.9	40.4	40.3
1994	39.6	39.5	46.7	46.3	43.0	42.7
1995	40.1	39.8	50.0	49.2	43.6	43.2
1996	39.7	39.5	48.8	47.7	43.5	42.9
1997	40.4	40.0	51.1	49.0	44.9	43.6
1998	40.3	39.4	46.5	44.4	43.6	42.0
1999	41.6	40.8	51.2	49.3	46.1	44.7
2000	42.5	41.8	56.7	54.9	47.3	46.0
2001	41.3	40.6	46.8	45.8	44.2	43.3
2002	42.0	41.4	45.6	44.8	44.0	43.3
2003	42.0	41.4	44.2	43.5	43.3	42.6
Multifamily[1]						
1992					50.2	
1993					47.1	
1994					51.0	
1995					47.8	
1996					48.5	
1997					48.0	
1998					47.0	
1999					49.7	
2000					51.6	
2001					52.7	
2002					55.0	
2003					54.1	

Source: HMDA data for metropolitan areas. See text for definition of underserved areas and for the method for excluding B&C loans from the market.

[1] A purchase/refinance breakdown is not available for multifamily.

In most years, refinance loans are more likely than home purchase loans to finance properties located in underserved census tracts. Between 1994 and 2003, 27.3 percent of refinance loans were for properties in underserved areas, compared to 25.5 percent of home purchase loans. This 1.8 percentage point refinance-home-purchase differential is mostly due to the influence of subprime loans. Excluding B&C (all subprime) loans and considering the same time period, 26.1 (24.9) percent of refinance loans were for properties in underserved areas, compared to 25.1 (24.6) percent of home purchase loans. Thus, excluding B&C (subprime) loans reduces the differential from 1.8 percentage points to 1.0 (0.3) percentage point. In the year (2000) with the largest differential,

excluding B&C (all subprime) loans reduced the refinance-home-purchase differential from 8.1 percent to 6.9 (5.7 percent); in this case, a significant differential remained after excluding B&C (subprime) loans. In the heavy refinance years of 1998, 2001, 2002, and 2003 underserved areas accounted for about 25 percent of total (both home purchase and refinance) owner loans.

The underserved areas share for home purchase loans has been in the 25–26 percent range since 1995, except for 2000 and 2002 when it increased to over 27 percent, and in 2003 when it increased to 28.5 percent. Considering all (both home purchase and refinance) loans during recent ''home purchase'' environments, the underserved areas share was a high 28–30 percent during 1999–2000, compared with a 27 percent average between 1995 and 1997; excluding B&C and other (*i.e.* A-minus) subprime loans places 1999 on par with the earlier years, with only the year 2000 showing a higher level of underserved area lending than occurred during 1995–97. These data indicate that the single-family-owner market in underserved areas has remained strong since the 2000 Rule was written. While it is recognized that economic and housing affordability conditions could change and reduce the size of the underserved areas

market, it appears that the underserved market has certainly maintained itself at a high level over the past four years.

Renter Mortgages. The second and third sets of numbers in Table D.12 are the underserved area percentages for single-family rental mortgages and multifamily mortgages, respectively. Based on HMDA data for single-family, non-owner-occupied (*i.e.,* investor) loans, the underserved area share of newly-mortgaged single-family rental mortgages has averaged about 44 percent (over nine or ten years). HMDA data also show that about half of newly-mortgaged multifamily rental units are located in underserved areas. HUD's baseline assumes that 42.5 percent of single-family investor loans and 48 percent of multifamily loans are located in underserved areas. The GSEs and ICF argued that HUD had overstated these underserved area percentages; Section G.4 below, which focuses on the 2000-based underserved area percentage, will discuss and respond to their concerns. Fannie Mae also said that subprime (or B&C) loans should be taken out of the SF investor loans. As shown in Table D.12, deducting B&C loans reduces the underserved area percentage for SF investor mortgages by almost one percentage point (the 1993–2003 unweighted average falls from 44.0 percent to 43.1

percent). HUD's model excludes B&C investor loans in the same manner it excludes B&C owner loans (*see* earlier explanation).

2. Market Estimates for Underserved Areas in Metropolitan Areas

Table D.13 reports HUD's estimates of the market share for underserved areas based on the projection model discussed earlier. The estimates in Table D.13 exclude the effects of B&C owner loans and B&C investor loans. The percentage of single-family-owner mortgages financing properties in underserved areas is the most important determinant of the overall market share for this goal. Therefore, Table D.13 reports market shares for different single-family-owner percentages ranging from 30 percent (2000 level) to 20 percent (1993 level) to 19 percent. Considering a 15.0-percent MF mix and a 8.5-percent investor mortgage share, the market share estimate is 31–32 percent if the overall (both home purchase and refinance) single-family-owner percentage for underserved areas is at its 1994–2003 HMDA average of 26.6 percent. The overall market share for underserved areas peaks at 35 percent when the single-family-owner percentage is at its 2000 level of 30 percent.

Table D.13

Underserved Area Market Estimates

Sensitivity Analysis (1990 - Census Data)

Multifamily Mix (Percent)

Investor Mortgage Share (Percent) / Underserved Area Percentage for SF Owners	12.25				13.5				14.25				15.0				16.0			
	8	8.5	9	9.5	8	8.5	9	9.5	8	8.5	9	9.5	8	8.5	9	9.5	8	8.5	9	9.5
30	33.9	34.0	34.1	34.1	34.1	34.2	34.3	34.4	34.3	34.4	34.4	34.5	34.4	34.5	34.6	34.6	34.6	34.7	34.8	34.8
29	33.1	33.2	33.3	33.3	33.3	33.4	33.5	33.6	33.5	33.6	33.6	33.7	33.6	33.7	33.8	33.8	33.8	33.9	34.0	34.0
28	32.2	32.3	32.4	32.5	32.5	32.6	32.7	32.8	32.7	32.8	32.8	32.9	32.8	32.9	33.0	33.1	33.0	33.1	33.2	33.3
27	31.4	31.5	31.6	31.7	31.7	31.8	31.9	32.0	31.9	32.0	32.0	32.1	32.0	32.1	32.2	32.3	32.2	32.3	32.4	32.5
26	30.6	30.7	30.8	30.9	30.9	31.0	31.1	31.2	31.1	31.2	31.2	31.3	31.2	31.3	31.4	31.5	31.4	31.5	31.6	31.7
25	29.8	29.9	30.0	30.1	30.1	30.2	30.3	30.4	30.3	30.4	30.4	30.5	30.4	30.5	30.6	30.7	30.7	30.8	30.9	31.0
24	29.0	29.1	29.2	29.3	29.3	29.4	29.5	29.6	29.4	29.6	29.7	29.8	29.6	29.7	29.8	29.9	29.9	30.0	30.1	30.2
23	28.1	28.2	28.3	28.4	28.5	28.6	28.7	28.8	28.6	28.8	28.9	29.0	28.8	28.9	29.1	29.2	29.1	29.2	29.3	29.4
22	27.3	27.4	27.5	27.6	27.6	27.8	27.9	28.0	27.8	28.0	28.1	28.2	28.0	28.1	28.3	28.4	28.3	28.4	28.5	28.6
21	26.5	26.6	26.7	26.8	26.8	26.9	27.0	27.1	27.0	27.2	27.3	27.4	27.2	27.4	27.5	27.6	27.5	27.6	27.7	27.8
20	25.7	25.8	25.9	26.0	26.0	26.1	26.2	26.3	26.2	26.4	26.5	26.6	26.4	26.6	26.7	26.8	26.7	26.8	27.0	27.1
19	24.8	25.0	25.1	25.2	25.2	25.3	25.5	25.6	25.4	25.6	25.7	25.8	25.6	25.8	25.9	26.0	25.9	26.1	26.2	26.3

The analysis can also be conducted in terms of the home purchase percentages reported in Table D.13. Again, considering a 15.0-percent MF mix and an 8.5-percent investor mortgage share, the underserved area market estimates reported in Table D.13 are: 33.3 percent if the owner percentage is 28.5 percent (home purchase share for 2003); 32.1 if the owner percentage is 27 percent (home purchase share in 2000 and 2002 slightly above the 1999–2003 average home purchase share of 26.8 percent); 31.3 percent if the owner percentage is 26 percent (home purchase share for 1999 and 2001); and 30.5 percent if the owner percentage is 25 percent (home purchase average from 1994–98). This analysis assumes that the underserved areas share of refinance loans is the same as those listed above for home purchase loans. But, as Table D.12 shows, the underserved areas share of refinance loans tends to be higher than that for home purchase loans. And in the year 2000, the overall underserved areas share for owner loans reached 30 percent; as noted in the previous paragraph, the overall market estimate is 34.6 percent in this case. However, the next highest overall owner share is the 28.2 percent share in 1999, which yields a market estimate of approximately 33 percent.

Sensitivity Analyses. Unlike the Low- and Moderate-Income and Special Affordable Goals, the market estimates differ only slightly as one moves from a 13.5 percent MF mix to 16.0 percent MF mix. For example, reducing the assumed multifamily mix from 16.0 percent to 13.5 percent reduces the overall market projection for underserved areas by only 0.5–0.6 percentage points. This is because the underserved area differentials between owner and rental properties are not as large as the low- and moderate-income differentials reported earlier.

Similarly, the market estimates differ only slightly with changes in the investor mortgage share. Reducing the investor mix from 9.5 percent to 8.0 percent reduces the overall market projection for underserved areas by only 0.2–0.3 percentage points.

Case 2 (*see* Table D.9) considered slightly smaller underserved area percentages for rental properties (40 percent for SF rentals and 46 percent for MF rentals), as compared with the baseline Case 1, which assumed 42.5 percent and 46.0 percent, respectively. Incorporating these Case 2 assumptions reduces the underserved areas market estimate by only 0.6 percentage points. For example, if the SFO home purchase share is 28 percent, then the overall underserved area estimate is 32.3 percent under Case 2, as compared with 32.9 percent under Case 1 (*see* Table D.13).

Examples of Home Purchase and Refinance Environments. The above projection results for a home purchase environment can be compared with actual results for two home purchase years, 1999 and 2000 (*see* earlier description of these two years in the low-mod section, F.3.a). For 1999, the baseline model assumed a multifamily mix of 16.0 percent and a mortgage investor share of 8.2 percent. Under these assumptions, the projected 1999 market estimate (based on 1990-Census data) is 33.1 percent; if the 1999 MF mix was lower at

15.0 (14.0), then the estimate of the 1999 underserved areas market share would be only slightly lower at 32.9 (32.6) percent.[54] For 2000, the baseline model assumed a multifamily mix of 17.2 percent and a mortgage investor share of 9.1 percent. Under these assumptions, the 2000 underserved areas market is estimated to be 34.9 percent. A lower MF mix of 16.0 (15.0) percent would reduce the estimated 2000 underserved areas market share slightly to 34.6 (34.4) percent.[55]

The heavy refinance scenarios discussed for the low-mod market were also projected for the underserved areas market. Since the impact of a heavy refinancing period on the underserved areas market share will be covered in Section G.4, which incorporates 2000 Census data, there is no need for a detailed discussion in this section's analysis based on 1990 Census data. Still, it is useful to provide a quick review of the 1990-based underserved area estimates for three heavy refinancing environments (1998, 2001, 2002, and 2003). For 1998, the baseline model assumed a multifamily mix of 14.0 percent and a mortgage investor share of 6.8 percent. Under these assumptions, the 1998 market estimate is 29.9 percent. If the MF mix for 1998 had been 12.0 percent, instead of the baseline of 14.0 percent, then the estimated underserved area market share for 1998 would be 29.4 percent. For 2001, the baseline model assumed a multifamily mix of 13.5 percent and a mortgage investor share of 7.8 percent. Under these assumptions, the 2001 market estimate is 32.1 percent, dropping to 31.7 percent if the MF mix was 12.0 percent. For 2002, the baseline model assumed a multifamily mix of slightly over 11.0 percent and a mortgage investor share of 7.8 percent. Under these assumptions, the 2002 underserved areas market is estimated to be 31.6 percent, dropping to 31.1 percent if the MF mix is 9.5 percent. This analysis suggests that the underserved areas market based on 1990 Census data will be about 29–32 percent range during periods of heavy refinancing.[56]

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[54] Table D.15 of the 2000 GSE Rule also reported underserved area shares of 33.9 percent for 1995 and 1997 and 33.4 percent for 1996. These estimates, after adjustments for a lower HMDA-based mortgage investor share and a lower-than-baseline MF mix, would still remain in the 32–33 percent range. To provide some confirmation for this, HUD went back and re-estimated the model for 1997. As shown in Table D.15 of the 2000 GSE Rule, HUD had earlier estimated an underserved areas share of 33.9 percent for 1997 (which was the same as the 33.9-percent underserved areas estimate for 1995 and similar to the 33.4-percent estimate for 1996). With a lower investor share (8.4 percent instead of 10.0 percent) and other changes mentioned in the text, the new estimate for the 1997 underserved areas market was 32.7 assuming a multifamily mix of 19.3 percent. If the multifamily mix is reduced to 17.3 (16.3) percent, the underserved areas share of the 1997 market is 32.3 (32.0) percent. Thus, this 32.0–32.7 percent range for 1997 is consistent with a 32–33 percent range for 1995–1997.

[55] The baseline 34.9 percent estimate for 2000 is 0.4 percentage points lower than the 35.3 percent share reported in Table D.9 of the proposed rule. The difference is mostly explained by the different treatment of single-family rental mortgages.

[56] For the years 1999 to 2002, Fannie Mae estimated an underserved areas share of 32–33

Additional sensitivity analyses were conducted to reflect the volatility of the economy and mortgage market. Recession and high interest rate scenarios assumed a significant drop in the underserved area percentage for single-family-owner mortgages. The single-family-owner percentage can go as low as 24 percent—which is 3 percentage points lower than the 1995–2003 average of 27 percent—and the estimated market share for underserved areas remains at almost 30 percent. In a more severe case, the overall underserved market share would be 27.5 percent if the single-family-owner share fell to 21 percent (its 1992 level), which is 7–9 percentage points lower than its 1999–2000 levels.

3. Adjustments: B&C Loans, the Rural Underserved Areas Market, and Manufactured Housing Loans

B&C Loans. The procedure for dropping B&C loans from the projections is the same as described in Section F.3.b for the Low- and Moderate-Income Goal. The underserved area percentage for B&C loans is 44.5 percent, which is much higher than the projected percentage for the overall market (which peaks at 35 percent as indicated in Table D.13). Thus, dropping B&C loans will reduce the overall market estimates. Consider the case of a single-family-owner percentage of 27 percent, which yields an overall market estimate for underserved areas of 33.1 percent, including B&C loans. When B&C loans are excluded from the projection model, the underserved areas market share falls by 0.9 percentage points to 32.2 percent, which is the figure reported in Table D.13.

Non-metropolitan Areas. Underserved rural areas are non-metropolitan counties with:

(a) County median income at or below 95 percent of the greater of statewide non-metropolitan median income or nationwide non-metropolitan income; or

(b) A minority composition equal to 30 percent or more and a county median income no more that 120 percent of statewide non-metropolitan median income.

HMDA's limited coverage of mortgage data in non-metropolitan counties makes it impossible to estimate the size of the mortgage market in rural areas. However, all indicators suggest that underserved counties in non-metropolitan areas comprise a larger share of the non-metropolitan mortgage market than the underserved census tracts in metropolitan areas comprise of the metropolitan mortgage market. For instance, underserved counties within rural areas include 54 percent of non-metropolitan homeowners; on the other hand, underserved census tracts in metropolitan areas account for only 34 percent of metropolitan homeowners.

During 1999–2003, 38.3 percent of the GSEs' single-family-owner (SFO) purchases in non-metropolitan areas were in underserved counties while 23.1 percent of their SFO purchases in metropolitan areas were in underserved census tracts. These figures suggest the market share for

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percent. (*See* their Table I.9, page I–34.) This compares with HUD's estimate of 32.5 percent to 32.9 percent for the same period.

underserved counties in rural areas is higher than the market share for underserved census tracts in metropolitan areas. Thus, using a metropolitan estimate to proxy the overall market for this goal, including rural areas, is conservative.[57]

The limited HMDA data available for non-metropolitan counties also suggest that the underserved areas market estimate would be higher if complete data for non-metropolitan counties were available. According to HMDA, underserved counties accounted for 41.6 percent of SFO mortgages originated in non-metropolitan areas between 1999 and 2003. By contrast, underserved census tracts accounted for approximately 24.9 percent of SFO mortgages originated in metropolitan areas between 1999 and 2003.[58] Since non-metropolitan areas account for 13 percent of all single-family-owner mortgages [59] and estimating that the single-family-owner market accounts for 74.5 percent of newly-mortgaged dwelling units, then the non-metropolitan underserved area differential of 16.7 percent would raise the overall market estimate by 1.6 percentage point—16.7 percentage points *times* 0.13 (non-metropolitan area mortgage market share) *times* 0.745 (single-family owner mortgage market share). Based on this calculation, if the 16.7 point differential reflected actual market conditions, then the underserved areas market share estimated using metropolitan area data should be increased by 1.6 percentage points to account for the effects of underserved counties in non-metropolitan areas.[60] A more conservative

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[57] Between 1999 and 2001, the non-metropolitan portion of the Underserved Areas Goal contributed 1.1 to 1.4 (0.7 to 1.3) percentage points to Freddie Mac's (Fannie Mae's) overall performance (*i.e.*, including both metro and non-metro loans), compared with a goals-counting system that only included metropolitan areas.

[58] These data do not include loans originated by lenders that specialize in manufactured housing loans, as well as estimated B&C loans.

[59] Federal Housing Finance Board data.

[60] Mortgage Interest Rate Survey (MIRS) data reported by the Federal Housing Finance Board separate conventional home purchase loans by their metropolitan and non-metropolitan location. The average non-metropolitan share between 1999 and 2002 was about 13 percent.

adjustment of 1.25 percentage points was made in Table D.13 for the 2005–2008 projection model. The non-metropolitan area issue will be discussed further in Section G.4 below, which incorporates the effects of the new 2000 Census data.

Small Loans and Manufactured Housing Loans. Excluding manufactured housing loans and small loans (less than $15,000) reduces the overall underserved area market estimates reported in Table D.13 by less than one percentage point. This is estimated as follows. First, excluding these loans reduces the unadjusted underserved areas percentage for single-family-owner mortgages in metropolitan areas by about 1.2 percentage points, based on analysis of recent home purchase environments (1995–97 and 1999 and 2000). Multiplying this 1.2 percentage point differential by the property share of single-family-owner units (74.5 percent) yields 0.9 percentage points, which serves as a proxy for the reduction in the overall underserved area market share due to dropping manufactured home loans from the market analysis. The actual reduction will be somewhat less because dropping manufactured home loans will increase the share of rental units, which increases the overall underserved areas market share, thus partially offsetting the 0.8 percent reduction. The net effect is probably a reduction of about three-quarters of a percentage point.

The small loan and manufactured housing effects can be considered separately. Dropping only manufactured housing loans would reduce the market estimates by approximately three-fourths of a percentage point. ICF argued that loans with less than $15,000 should be excluded. The impact of doing this on the market estimates would be about one-third of a percentage point. ICF also considered scenarios where one-half of manufactured loans would be dropped, as well as small loans less than $15,000. The impact of doing this on the market estimates would be three-fifths of a percentage point.

The next section discusses changes as a result of switching from 1990 to 2000 Census geography.

4. 2000-Based Underserved Area Market Shares

The above analysis has concluded that 29–34 percent would be a reasonable market

range for the Geographically Targeted Goal based on past origination activity in underserved areas and on scenarios that cover a variety of economic and mortgage market conditions. That analysis, which included historical data going back to the early 1990's, necessarily used 1990 Census geography to define underserved census tracts. As explained in Appendix B, HUD will be defining underserved areas based on 2000 Census geography beginning in 2005, the first year covered by this final rule. Appendix B also explains that the number of census tracts in metropolitan areas covered by HUD's underserved area definition will increase from 21,587 tracts (based on 1990 Census) to 26,959 tracts (based on 2000 Census and OMB's respecification of metropolitan areas). This increase in the number of tracts defined as underserved means that the market estimate for the Geographically Targeted Goal will be about five percentage points higher than the 1990-based market estimate. Thus, this section provides a new range of market estimates for underserved areas defined in terms of 2000 Census data.

For the years 1999 to 2003, Table D.14a. reports the underserved areas share of the mortgage market for single-family-owner, investor (non-owner), and multifamily properties, with comparisons between 1990-based and 2000-based measures of underserved areas. HMDA data, which is the source of the mortgage data, were reported in terms of 1990 census tracts. For the years 1999 to 2002, HUD used various apportionment techniques to re-allocate 1990-based HMDA mortgage data into census tracts as defined by the 2000 Census; 2003 HMDA data were defined in terms of 2000 Census tracts, so no reallocation was required. The 1990-based underserved area market shares reported in Table D.14.a. are the same data reported earlier in Table D.12, while the 2000-based underserved area market shares result from re-allocating 1999–2002 HMDA data into 2000 Census geography. In addition, the data are defined in terms of the new OMB metropolitan area definitions.

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Table D.14a

Underserved Area Share of Mortgage Market in Metropolitan Areas:
1999-2003 HMDA Data
1990 Geography Versus 2000 Geography

| | Purchase | | | | | | Refinance | | | | | | Total | | | | | |
| | Conforming Market | | | Market W/O B&C Loans | | | Conforming Market | | | Market W/O B&C Loans | | | Conforming Market | | | Market W/O B&C Loans | | |
	2000-Based	1990-Based	Difference	2000-Based	1990-Based	Difference	2000-Based	1990-Based	Difference	2000-Based	1990-Based	Difference	2000-Based	1990-Based	Difference	2000-Based	1990-Based	Difference
Single-Family-Owner																		
1999	30.9	25.8	5.1	30.2	25.2	5.0	35.3	30.4	4.9	33.5	28.5	5.0	33.3	28.2	5.1	31.9	26.9	5.0
2000	32.6	27.0	5.6	31.7	26.2	5.5	40.6	35.1	5.5	38.5	33.1	5.4	35.7	30.1	5.6	34.2	28.7	5.5
2001	31.4	25.8	5.6	30.7	25.2	5.5	30.8	25.6	5.2	29.7	24.7	5.0	31.0	25.7	5.3	30.0	24.9	5.1
2002	32.8	27.1	5.7	31.8	26.3	5.5	29.4	24.2	5.2	28.4	23.3	5.1	30.4	25.0	5.4	29.4	24.2	5.2
2003	33.7	28.5	5.2	32.5	27.6	4.9	29.2	24.4	4.8	28.3	23.6	4.7	30.2	25.3	4.9	29.2	24.5	4.7
1999-2003	32.4	26.9	5.5	31.4	26.2	5.2	30.9	25.8	5.1	29.7	24.7	5.0	31.4	26.2	5.2	30.3	25.2	5.1
(Unweighted Average)	32.3	26.8	5.4	31.4	26.1	5.3	33.1	27.9	5.1	31.7	26.6	5.0	32.1	26.9	5.3	30.9	25.8	5.1
Non-Owner																		
1999	46.1	41.6	4.5	44.5	40.0	4.5	55.9	51.2	4.7	52.2	47.3	4.9	50.7	46.1	4.6	47.9	43.2	4.7
2000	47.5	42.5	5.0	46.0	41.0	5.0	61.1	56.7	4.4	57.5	53.0	4.5	52.1	47.3	4.8	49.6	44.6	5.0
2001	46.9	41.3	5.6	45.5	39.9	5.6	51.8	46.8	5.0	49.8	44.7	5.1	49.5	44.2	5.3	47.8	42.4	5.4
2002	47.7	42.0	5.7	46.5	40.8	5.7	50.8	45.6	5.2	49.1	43.9	5.2	49.4	44.0	5.4	47.9	42.5	5.4
2003	41.3	42.0	-0.7	39.7	40.7	-1.0	45.0	44.2	0.8	43.2	42.7	0.5	43.5	43.3	0.2	41.9	41.9	0.0
1999-2003	47.5						53.6						50.5					
(Unweighted Average)	45.9	41.9	4.0	44.4	40.5	4.0	52.9	48.9	4.0	50.4	46.3	4.0	49.0	45.0	4.1	47.0	42.9	4.1
Multifamily[1]																		
1999													57.2	49.7	8.1			
2000													58.6	51.6	7.2			
2001													60.4	52.7	8.0			
2002													61.6	55.0	6.8			
2003													62.4	54.1	8.3			
1999-2003													60.0	52.6	7.4			

Source: HMDA data for metropolitan areas. See text for definition of underserved areas and for the method for excluding B&C loans from the market. The "1990-Based" underserved area shares are based on 1990 census tracts while the "2000-Based" underserved area shares are based on 2000 census tracts, and new OMB metropolitan area definitions.

[1] A purchase/refinance breakdown is not available for multifamily.

Single-Family-Owner Loans. First, consider the market shares for single-family-owner properties in the top portion of Table D.14a. In 2002, the underserved area percentage for home purchase loans increases from 27.1 percent (1990-based) to 32.8 percent (2000-based), an increase of 5.7 percentage points; the corresponding percentages for refinance loans were 24.2 percent (1990-based) and 29.4 percent (2000-based), or an increase of 5.2 percentage points. Considering total owner loans (*i.e.*, both home purchase and refinance owner loans), the weighted average of the ''Differences'' reported in Table D.14a. is 5.4 percentage points in 2002 for the conforming market. Between 1999 and 2003, 30.3 percent of mortgage originations were originated in underserved areas based on 2000 geography, compared with 25.2 percent based on 1990 geography—yielding the overall differential of 5.1 percentage points. (The unweighted 1999–2003 differential is 4.9 percent.)

The first column of Table D.14a. reports the 2000-based underserved areas share for home purchase loans for the years, 1999 to 2003. The share was about 31 percent in 1999 and 2001 and in the 32.6–33.7 percent range during 2000, 2002, and 2003. Notice that the peak share (33.7 percent) for home purchase loans occurred in the most recent year, 2003. It should be recalled that there was no need to re-apportion the 2003 data from 1990-based tracts to 2000-based tracts, as these 2003 data were already defined in terms of 2000 census geography. Whether this fact affects the various differentials between 2003 and earlier years is not clear. The years 1999 and 2000 exhibited higher underserved area shares for refinance loans than for home purchase loans; as discussed earlier, this pattern was largely, but not entirely, due to subprime refinance loans.

Single-Family Rental and Multifamily Loans. Next, consider the underserved area market shares reported for single-family rental (or non-owner) and multifamily properties in the middle and bottom portions of Table D.14a. In 2002, the underserved area percentage for home purchase investor loans increases from 42.0 percent (1990-based) to 47.7 percent (2000-based), an increase of 5.7 percentage points; the corresponding percentages for refinance loans were 45.6 percent (1990-based) and 50.8 percent (2000-based), or an increase of 5.3 percentage points. The multifamily differentials are somewhat higher at approximately 7–8 percentage points. Between 1999 and 2003, 60 percent (unweighted average) of multifamily originations were originated in underserved areas based on 2000 geography, compared with 52.6 percent based on 1990 geography.

In the 2004 proposed GSE Rule, HUD made the following 2000-based assumptions with

respect to the underserved areas shares of single-family rental properties: 52.0% for Case 1 (baseline), 50.0% for Case 2, and 54.0% for Case 3. With respect to multifamily properties, the following assumptions were made with respect to underserved areas shares: 58.0% for Case 1 (baseline), 56.0% for Case 2, and 59.0% for Case 3. ICF criticized HUD's baseline assumptions (52 percent for SF investors and 58 percent for MF rentals) as being too high.[61] ICF's best estimate was 50 percent for SF investors and 55 percent for MF rentals.[62] Since SF rentals account for 10.6 percent of financed units, reducing the underserved area share by two percentage points from HUD's 52 percent to ICF's 50 percent would reduce the overall underserved areas goal by 0.21 percentage point. Since MF rentals account for 15.0 percent of financed units (in HUD's baseline model), reducing the underserved area share by three percentage points from HUD's 58 percent to ICF's 55 percent would reduce the overall underserved areas goal by an additional 0.45 percentage point. Thus, the combined effect of ICF's assumptions would be a 0.66 percentage point reduction in the underserved areas goal. Fannie Mae did not comment directly on this parameter other than to emphasize that HUD's Case 2 is the ''most likely set of assumptions'' for estimating the underserved areas share (Fannie Mae Appendix, p. I–38). HUD's Case 2 (*see* above) would drop the baseline underserved area share for both SF and MF by two percentage points; therefore, Fannie Mae's assumptions are similar to ICF's.

In this analysis supporting the Final Rule, HUD is retaining the same underserved areas shares for SF and MF rental properties that it used in the 2004 proposed GSE rule. HUD conducted several additional analyses that support its SF rental baseline of 52 percent and its MF rental baseline of 58 percent. These analyses are summarized below.

A report by Abt Associates[63] calculated 1990-based underserved areas shares using the 1995 AHS and POMS data, for (a) all SF rental properties, (b) all SF rental properties

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[61] ICF incorrectly said HUD's baseline underserved areas share for MF rentals was 60 percent, rather than 58 percent (ICF Appendix, p. 47).

[62] Freddie Mac says ''ICF estimates the multifamily underserved share to be just 56 percent and the single-family renter underserved area share to be just 50 percent'' (at Appendix IV–24). However, ICF uses a 50 percent share in its projection model (ICF Appendix, p. 133); therefore, 55 percent is used here as the ICF number. Also, ICF's lower (upper bound) projection was 47 (53) percent for SF rental properties and 56 (58) percent for multifamily properties.

[63] ''Affordability and Geographic Distribution of the Housing Stock and the Use of Mortgage Finance,'' Abt Associates, October 22, 2001.

with a mortgage, (c) all SF rental properties with a conventional conforming mortgage, (d) all SF Rental properties with a new first mortgage, and (e) all SF rental properties with a new conventional conforming first mortgage. The underserved areas share for each of the groups of SF rental properties was approximately 50 percent. Adding a five percent adjustment to reflect 2000-based geography (*see* Table D.14a) would increase these estimates to 55 percent. While this information is dated, it is consistent with HUD's 52.0 percent baseline and its 54.0 percent assumption in Case 3. Abt Associates also reported similar data for MF rental categories (a)–(c). In this case the underserved areas share ranged from 51–54 percent; adding 7–8 percent adjustment to reflect 2000-based geography would increase these estimates to 55–62 percent, again providing support for HUD's baseline (58 percent) and Case 3 (59 percent) assumptions.[64]

HUD had Census Bureau staff use the geocoded 2003 AHS file to calculate the distribution of the rental housing stock across served and underserved areas. This analysis, which was conducted in terms of 1990-Census geography, showed that 55.8 percent of the SF rental housing stock was located in underserved areas, as was 51.4 percent of the MF rental housing stock. Adding a five (7–8) percent adjustment to reflect 2000-based geography would increase these SF (MF) rental estimates to 60.8 (58.4–59.4) percent.

HUD also had Census Bureau staff use the geocoded, 2001 Residential Finance Survey (RFS) to calculate the distribution of rental mortgages and financed units across served and underserved areas. (*See* Table D.14b.) Unlike the AHS analysis mentioned above, this analysis was conducted in terms of 2000 Census geography. In 2001, 54.1 percent of newly-mortgaged SF rental units were located in underserved areas, as were 61.5 of newly mortgaged MF rental units. Similar underserved area percentages were obtained for SF investor and MF loans that were originated in 1999 and 2000 and still surviving at the time of the RFS survey in 2001.[65]

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[64] As shown in Table D.12, excluding B&C investor loans reduces the market's underserved area share for SF investor loans. An adjustment for B&C investor loans is made within HUD's model, along the same lines as that B&C owner loans are excluded from the analysis. See Section F.3.c for further explanation.

[65] It is encouraging that the RFS underserved area percentage (31.7 percent) for SF-owner mortgages originated in metropolitan areas during 2001 was similar to the corresponding percentage (31.0 percent) reported by HMDA.

Table D.14b

Underserved Area Shares for Metropolitan and Non-Metropolitan Areas (2000-Census), 2001

Home Purchase	Metropolitan Areas		Non-Metropolitan Areas		U.S.	
Single-Family Rentals	51.3	(53.0)	58.8	(57.0)	53.4	(54.2)
Multifamily	67.1	(69.0)	17.2	(38.9)	58.3	(66.7)
Total Home Purchase and Refinance						
Single-Family Rentals	51.9	(55.2)	53.8	(50.7)	52.4	(54.1)
Multifamily	66.1	(63.2)	38.3	(40.2)	61.7	(61.5)

Source: Residential Finance Survey for mortgages originated in 2001. Data for mortgages originated in 1999 and 2000 (and still surviving at the time of the RFS survey in 2001) exhibited similar percentages.

Note: The first figure represents the underserved areas share of mortgages originated in 2001. The second figure in parenthesis is the underserved areas share of all newly mortgaged dwelling units in 2001.

Finally, HUD examined the GSEs' own data. Between 1999 and 2003, 58 percent of the SF rental units financed by GSE purchases were located in underserved areas. Between 1999 and 2002, 57 percent of the multifamily units financed by GSE purchases were located in underserved areas.

Based on the above analyses, HUD retained the assumptions from the 2004 GSE proposed rule concerning underserved areas location of SF and MF rental properties. Specifically, the baseline underserved area share for SF rental units is 52 percent and that for MF rental units is 58 percent.

2000-Based Underserved Area Market Estimates. Table D.15 reports the results of the projection model assuming 2000 geography. Since Table D.15 has the same interpretation as Table D.13, there is no need for a detailed explanation of it. Considering a 15.0-percent MF mix and a 8.5-percent investor mortgage share, the market share estimate is 36.9 percent if the overall (both home purchase and refinance) single-family-owner percentage for underserved areas is 31 percent, which is the estimated 1994–2003 HMDA average as well as the recent 1999–2003 HMDA average.[66]

[66] In this case, the 2000-based underserved area percentages for years prior to 1999 (*i.e.* 1994 to 1998 in this example) are estimated by adding 4.9 percent to the corresponding 1990-based underserved area percentages reported in Table D.12. The 4.9 percent is the unweighted difference of the 2000-based and 1990-based underserved area shares for total (home purchase and refinance) SFO owner loans reported in Table D.14. This procedure will be used throughout this section.

Table D.15

Underserved Area Market Estimates

Sensitivity Analysis (2000 Census Data)

Investor Mortgage Share (Percent) →	Multifamily Mix (Percent)																			
	12.25				13.5				14.25				15.0				16.0			
Underserved Area Percentage for SF Owners	8	8.5	9	9.5	8	8.5	9	9.5	8	8.5	9	9.5	8	8.5	9	9.5	8	8.5	9	9.5
36	40.1	40.2	40.3	40.4	40.4	40.5	40.6	40.7	40.6	40.6	40.7	40.8	40.7	40.8	40.9	41.0	40.9	41.0	41.1	41.2
35	39.3	39.4	39.5	39.6	39.6	39.7	39.8	39.9	39.7	39.8	39.9	40.0	39.9	40.0	40.1	40.2	40.2	40.3	40.3	40.4
34	38.5	38.6	38.7	38.8	38.8	38.9	39.0	39.1	38.9	39.0	39.1	39.2	39.1	39.2	39.3	39.4	39.4	39.5	39.6	39.7
33	37.6	37.7	37.8	38.0	37.9	38.1	38.2	38.3	38.1	38.2	38.4	38.5	38.3	38.4	38.5	38.6	38.6	38.7	38.8	38.9
32	36.8	36.9	37.0	37.1	37.1	37.2	37.4	37.5	37.3	37.4	37.6	37.7	37.5	37.6	37.8	37.9	37.8	37.9	38.0	38.1
31	36.0	36.1	36.2	36.3	36.3	36.4	36.6	36.7	36.5	36.6	36.8	36.9	36.7	36.8	37.0	37.1	37.0	37.1	37.2	37.4
30	35.1	35.3	35.4	35.5	35.5	35.6	35.8	35.9	35.7	35.8	36.0	36.1	35.9	36.1	36.2	36.3	36.2	36.3	36.5	36.6
29	34.3	34.5	34.6	34.7	34.7	34.8	35.0	35.1	34.9	35.0	35.2	35.3	35.1	35.3	35.4	35.5	35.4	35.6	35.7	35.8
28	33.5	33.6	33.8	33.9	33.9	34.0	34.2	34.3	34.1	34.2	34.4	34.5	34.3	34.5	34.6	34.7	34.6	34.8	34.9	35.0
27	32.7	32.8	33.0	33.1	33.1	33.2	33.3	33.5	33.3	33.4	33.6	33.7	33.5	33.7	33.8	34.0	33.9	34.0	34.1	34.3

The above results are based on averages across both home purchase and heavy refinance environments. The analysis can also be conducted in terms of home purchase environments, focusing on the underserved area percentages for home purchase loans reported in the first column of Table D.15. Again, considering a 15.0-percent MF mix and a 8.5-percent investor mortgage share, the underserved area market estimates reported in Table D.15 are: 37.8 percent if the SFO owner underserved area percentage is 32.3 percent (1999–2003 average home purchase share); [67] 37.6 if the SF owner percentage is 31.8 percent (estimated average home purchase share from 1994–2003); 36.9 percent if the owner percentage is 31 percent (approximate home purchase share in 1999 and 2001); 38.0 percent if the owner percentage is 32.5 percent (approximate home purchase percentage in 2000 and 2002); and 39.0 percent if the owner percentage is 33.7 percent (home purchase percentage in 2003). This analysis assumes that the underserved areas share of refinance loans is the same as those listed above for home purchase loans. But, as Table D.14a shows, in recent home purchase environments, the underserved areas share of refinance loans has been higher than that for home purchase loans, largely but not totally due to subprime refinance loans (see earlier discussion). In the year 2000, for example, the overall underserved areas share for SFO owner loans reached 34.2 percent; in this case, the market estimate is 39.4 percent in this case. However, the next highest overall (both home purchase and refinance loans) owner share is the 31.9 percent share in 1999, which yields at an overall market estimate of approximately 37.5 percent.

Fannie Mae reports its estimates of the 2000-Census-based underserved areas market in Table I.13 on page I–40. For SFO percentages of 30 percent and 32 percent (obtained by adding five percentage points to Fannie Mae's 1990-Census-based SFO percentages of 25 percent and 27 percent, respectively), Fannie Mae projects underserved area market shares of 35.1 percent and 36.8 percent, respectively. (It is interesting that these are the exact same market shares projected by HUD in Table D.15 for the ''Fannie Mae assumptions'' of 12.2-percent MF mix and an 8.0-percent investor mortgage share—suggesting that Fannie Mae's model produces the same results as HUD's model when the input assumptions are the same.) Fannie Mae concluded that the higher 36.8 percent market share was not appropriate because the SFO percentage of 32 percent was too high. However, as shown in Table D.14a, the 2000-based underserved area percentage for SFO home loans was greater than 32 percent in 2000, 2002, and 2003.

Multifamily Mix. As discussed earlier, compared with the low-mod and special affordable market estimates, the underserved area market estimates exhibit less variation as one moves from a 13.5 percent MF mix to

16.0 percent MF mix. For example, reducing the assumed multifamily mix from 16.0 percent to 13.5 percent reduces the overall market projection for underserved areas by only 0.6–0.7 percentage points. This smaller MF mix effect occurs because the underserved area differentials between owner and rental properties are not as large as the low- and moderate-income and special affordable differentials reported earlier. For example, the 1999–2003 average SF-owner underserved areas share (30.3 percent in Table D.14a) is only 22 percentage points less than the baseline SF-Rental underserved areas share (52.0); on the other hand, the 1999–2003 average SF-owner special affordable share (15.7 percent) is about 42 percentage points less than the baseline SF-Rental special affordable share (58.0 percent).

As shown in Table D.15, ICF's MF mix of 14.25 percent produces results intermediate between HUD's 13.5 percent and 15.0 percent. Estimates of the underserved areas based on a MF mix of 14.2 percent are only 0.2 percentage points less than those based on a MF mix of 15.0 percent.

Investor Mortgage Share. Similarly, the market estimates differ only slightly with changes the investor mortgage share. Reducing the investor mix from 9.5 percent to 8.0 percent reduces the overall market projection for underserved areas by only 0.2–0.4 percentage points. If the 10.0 percent baseline from the 2004 proposed GSE rule were used in this analysis, the market estimates would be approximately 0.3 (0.2) percentage points higher relative to the results reported in Table D.15 for a baseline of 8.5 (9.0) percent. Fannie Mae's model combined a MF mix of 12.3 percent with an investor mortgage share of 8.0 percent. If the underserved area share of home purchase loans is 32.3 percent (the average for 1999–2003), then the estimate for the overall underserved areas market is 37.0 percent based on Fannie Mae's assumptions. In contrast, HUD's estimates (with a MF mix of 15.0 percent and 8.5 percent investor share) are 37.8 percent—almost one percentage point higher. If the underserved areas share of home purchase loans is at its 2003 level (33.7 percent), then Fannie Mae's assumptions result in a market estimate of 38.3 percent while HUD's assumptions (see previous sentence) result in a market estimate of 39.0 percent. In its projection model, ICF assumed an underserved areas share of 31.5 percent for SF owner loans and produced an estimate of almost 37 percent for the overall underserved areas market during 2005–2008 (ICF Appendix, p.133).

Different Underserved Area Shares for Rental Properties. Case 2 (see Table D.9) considered slightly smaller underserved area percentages for rental properties (50 percent for SF rentals and 56 percent for MF rentals), as compared with the baseline Case 1, which assumed 52 percent and 58 percent, respectively. Case 2 includes ICF's assumption (50 percent) for SF Rentals and is close to ICF's assumption (55 percent) for MF Rentals. Incorporating these Case 2 assumptions reduces the underserved areas market estimate by only 0.5 percentage points. For example, if the SFO home purchase share is 33 percent, then the overall

underserved area estimate is 37.9 percent under Case 2, as compared with 38.4 percent under Case 1 (see Table D.15). As discussed earlier, the baseline Case 1 assumptions offer a reasonable approach for estimating the underserved area market shares.

Examples of Home Purchase Years. The above projection results for a home purchase environment can be compared with actual results for two home purchase years, 1999 and 2000 (see earlier description of these two years in the low-mod section, F.3.a). For 1999, the baseline model assumed a multifamily mix of 16.0 percent (see Section C) and a mortgage investor share of 8.2 percent (see Section D). Under these assumptions, the projected 1999 market estimate (based on 2000-Census data) is 37.6 percent; lowering the MF mix to 15.0 (14.0) percent instead of 16.0 percent reduces the estimate only slightly to 37.3 (36.9) percent. For 2000, the baseline model assumed a multifamily mix of 17.2 percent and a mortgage investor share of 9.1 percent. Under these assumptions, the 2000 underserved areas market is estimated to be 39.7 percent. A lower MF mix—for example, 16.0 (15.0) percent instead of 17.2 percent—would reduce the estimated 2000 underserved areas market share slightly to 39.4 (39.2) percent.[68]

For 1999, the 2000-based underserved area estimate (37.6 percent) is 4.8 percentage points greater than the earlier-reported 1990 based estimate (32.8 percent); for the year 2000, the differential is 5.0 percentage points (39.7 versus 34.7). This approximately five percentage point differential can be used to obtain estimates of 2000-based underserved area shares for the earlier home purchase years, 1995 to 1997. Table D.9 of the proposed GSE rule reported 1990-based underserved area shares of 33.9 percent for 1995 and 1997 and 33.4 percent for 1996. These estimates, after adjustments for a lower HMDA-based mortgage investor share and a lower-than-baseline MF mix, would remain in the 32–33 percent range. Adding five percentage points would place these estimates in the 37–38 percent range in terms of 2000 Census geography.[69] ICF's best estimates were approximately 37 percent for 1994–1997 and 39 percent for 1999 (ICF Appendix, p. 77); its lower bound estimates were approximately 34 percent during 1994–1997 and 1999, and 37 percent in 2000 (ICF Appendix, p.82). As noted earlier, ICF fills its report with numerous minimums that often

[67] The market share estimates are interpolated from Table D.15. For example, the overall market estimate for a SFO percentage of 32.3 percent is obtained by adding [.3*(38.4 minus 37.6)] to 37.6, to obtain the 37.6 figure reported in the text.

[68] The baseline 39.7 percent estimate for 2000 is 0.7 percentage points lower than the 40.4 percent share reported in Section G.4 of Appendix D of the proposed rule, mainly for the reasons discussed in the previous footnote. The difference is mostly explained (a) by the different treatment of single-family rental mortgages and (b) by a 0.4 percentage point decline in HUD's projections (in terms of the 2000 Census data) of the 2000 underserved areas percentage for SF owners.

[69] As explained earlier in Section G.2, HUD re-estimated the underserved areas share for 1997 under the new assumptions (*e.g.*, a lower, HMDA-based mortgage share for investor loans), obtaining a range of 32.0 percent (with a 16.3 MF mix) to 32.7 percent (with a 19.3 percent MF mix). These estimates assume 1990 Census geography. Adding five percentage points to reflect 2000 Census geography yields estimates of 37.0 percent to 37.7 percent for the 1997 underserved areas market.

appear unbelievable, such as the 32.8 percent projection for the overall underserved market in 2000 (ICF Appendix, p. 83), a time when the SF owner underserved areas percentage was 35.7 percent itself (see Table 14a)—in this case, the rental portion of the market was below the underserved share for owners, rather than the typical case where the rental portion is more "goals rich" than the owner portion.

Market Volatility. Additional sensitivity analyses were conducted to reflect the volatility of the economy and mortgage market. Recession and high interest rate scenarios assumed a significant drop in the underserved area percentage for single-family-owner mortgages. The single-family-owner home purchase percentage can go as low as 29 percent—which is almost 2.8 percentage points lower than the 1994–2003 average of 31.8 percent, 3.3 percentage points lower than the 1999–2003 average of 32.3 percent, and 4.7 percentage points lower than the underserved areas share of home purchase loans in 2003—and the estimated market share for underserved areas remains about 35 percent. In a more severe case, the overall underserved market share would be 33–34 percent if the single-family-owner home purchase share fell to 27 percent (its 1992 level), which is 5.3 percentage points lower than its 1999–2002 average.

Table D.11 shows the impact on the underserved areas market share under different assumptions about a refinancing environment. See the earlier discussion of the low-mod goal in Section F.2b for an explanation of the various model assumptions necessary to simulate a heavy refinance environment. The discussion focuses on the 65-percent refinance rate since that has characterized recent refinance waves. With respect to the underserved area characteristics of SF owner loans, two scenarios were considered: (A) Scenario A represents the average underserved area percentages for the last four refinance years (1998, 2001, 2002, and 2003)—32 percent for home purchase loans and 30 percent for refinance loans; and (B) Scenario B represents the average underserved percentages for the two most recent refinance years (2002, and 2003)—33 percent for home purchase loans and 29 percent for refinance loans. Thus, there is a 2–4 percentage point differential between home purchase loans and refinance loans in a heavy refinancing environment.

Under Scenario A, the underserved areas market shares varied by almost two percentage points (*i.e.*, 1.6 points), from 36.0 percent with a 12 percent MF mix to 34.4 percent with a 6 percent MF mix. These underserved area market shares are 3–5 percentage points lower than the underserved areas shares reported in Table D.15 for HUD's baseline home purchase environment. (The results were similar for Scenario B.) Notice that under Scenario A, the underserved areas share remains in the 34–35 percent range even if the MF mix falls to 6–8 percent. In addition to higher-income borrowers dominating the single-family market, the share of the "goals rich" rental market declines in a refinancing wave, which tends to further reduce the underserved areas

share of market activity. The right-hand column of Table D.11 shows that the rental share falls to the 17–22 percent range, or 4–9 percentage points less than the almost 26-percent rental share in HUD's baseline model. This contributes to the underserved areas share of the market typically falling to 34–36 percent during a heavy refinancing period.

Model estimates were also made for the recent refinancing years of 2001, 2002, and 2003. For 2001, the baseline model assumed a multifamily mix of 13.5 percent and a mortgage investor share of 7.8 percent. Under these assumptions, the 2001 market estimate is 36.9 percent.[70] If the MF mix for 2001 had been 12.5 (12.0) percent, then the estimated underserved areas market share for 2001 would be 36.6 (36.4) percent. For 2002, the baseline model assumed a multifamily mix of slightly over 11.0 percent and a mortgage investor share of 7.8 percent. Under these assumptions, the 2002 underserved areas market is estimated to be 36.2 percent.[71] A lower MF mix—for example, 10.5 (9.5) percent instead of 11 percent—would reduce the estimated 2002 underserved areas market share to 36.0 (35.7) percent. ICF's best estimates for 1998, 2001, and 2002 were in the 34–35 percent range while its lower-bound estimates were in the 32–33 percent range.[72]

As noted in Section F.3.b, HUD did not receive 2003 HMDA data until early August 2004 and therefore HUD has not been able to develop a complete projection model for 2003. Still, some rough projections for 2003 are provided here for different assumptions about the MF mix, recognizing that firm data on the 2003 multifamily market are not available. Combining an investor mortgage share of 8.2 from HMDA with different MF mixes produces the following estimates of the underserved areas market for 2003: 35.1 percent (MF mix of 8 percent); 34.7 percent (MF mix of 7 percent); and 34.4 percent (MF mix of 6.0 percent).

As shown by both the simulation results in Table D.10 and by the actual experience during 2001–2003, the underserved area share declines when refinances dominate the mortgage market. The above estimates

suggest that the underserved areas share will not likely fall below 35 percent, although, as noted above, the estimates for 2003 (around 35 percent) are somewhat speculative.

Similar to 1999 and 2000, the 2001 and 2002 differences between the 1990-based and 2000-based underserved area market estimates are about five percentage points. For 2001, the 2000-based baseline estimate (36.9 percent) is 5.0 percentage points greater than the earlier-reported 1990 based estimate of 31.9 percent); for the year 2002, the differential is 4.9 percentage points (36.2 versus 31.3).[73]

The analysis in this section suggests that a reasonable range for the overall market share for underserved areas based on 2000 geography might be 35–39 percent, which is consistent with the 30–34 percent range estimated earlier based on 1990-based geography.

Feasibility of Underserved Areas Goal in a Period of Heavy Refinancing. HUD received a number of public comments seeking a regulatory solution to the issue of the ability of the GSEs to meet the housing goals during a period when refinances of home mortgages constitute an unusually large share of the mortgage market. As explained in the Preamble, HUD is not addressing the refinance issue in this final rule. Elsewhere in the **Federal Register**, HUD is publishing an Advance Notice of Proposed Rulemaking that advises the public of HUD's intention to consider by separate rulemaking a provision that recognizes and takes into consideration the impact of high volumes of refinance transactions on the GSEs' ability to achieve the housing goals in certain years, and solicits proposals on how such a provision should be structured and implemented. HUD believes that it would benefit from further consideration and additional public input on this issue. HUD also notes that FHEFSSA provides a mechanism by which HUD can take into consideration market and economic conditions that may make the achievement of housing goals infeasible in a given year. (See 12 U.S.C. 1336(b)(e).)

B&C Loans. The procedure for dropping B&C loans from the projections is the same as described in Section F.3.c for the Low- and Moderate-Income Goal. The underserved areas percentage for B&C loans is 52.0 percent, which is larger than the projected percentages for the overall market given in Table D.15. Thus, dropping B&C loans (as well as all subprime loans) will appreciably reduce the overall market estimates. Consider the case of a single-family-owner percentage of 32 percent, which yields an overall market estimate for the underserved areas of 38.6 percent if B&C loans are included in the analysis. Dropping B&C loans from the projection model reduces the market share by one percentage point to 37.6 percent, as reported in Table D.15. Dropping all

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[70] The baseline 36.9 percent estimate for 2001 is 0.8 percentage point lower than the 37.7 percent share reported in Section G.4 of Appendix D of the proposed rule. The difference is mostly explained (a) by the different treatment in this Final Rule of single-family rental mortgages and (b) by a 0.2 percentage point decline in HUD's projections (in terms of the 2000 Census data) of the 2001 underserved areas percentage for SF owners.

[71] The baseline 36.2 percent estimate for 2002 is one percentage point lower than the 37.2 percent share reported in Section G.4 of Appendix D of the proposed rule. The difference is mostly explained (a) by the different treatment in this Final Rule of single-family rental mortgages and (b) by a 0.4 percentage point decline in HUD's projections (in terms of the 2000 Census data) of the 2002 underserved areas percentage for SF owners.

[72] For the years 1999 to 2002, Fannie Mae estimated a 2000-Census-based underserved areas share of 37–38 percent, obtained by adding five percentage points to Fannie Mae's 32–33 percent estimate for the underserved areas market based on 1990 Census data. (See their Table I.9, page I–34.) This compares with HUD's estimate of 37.1 percent to 37.6 percent for the same period.

[73] The differentials reported in Table D.14 for the three individual property types tend to be greater than five percentage points, which raises the question of why the overall differential is only five percentage points. As explained later, the upward adjustment to account for underserved areas in non-metropolitan areas is about 0.65 percentage point less using the 2000-based Census data than it was using the 1990-based Census data.

subprime loans (A-minus as well as B&C) would reduce the underserved areas market projection to 37.4 percent.

Non-metropolitan Areas. As explained in Section G.3, in order to account for the much larger coverage of underserved areas in non-metropolitan areas, 1.25 percent was added to the market share based on metropolitan area data, in order to arrive at a nationwide estimate of the market share for underserved areas. According to HMDA, underserved counties accounted for 42.7 percent of single-family-owner mortgages originated in non-metropolitan areas during the 1999-to-2002 period, based on 1990 geography. With 2000 geography and the new tract-based definition of underserved areas in non-metropolitan areas, the market share falls by 2.3 percentage points to 39.6 percent. This 2000-based underserved areas percentage of 39.6 percent for non-metropolitan areas is about eight percentage points less than the comparable percentage for metropolitan areas.[74] This eight-point differential is lower than the 16-point differential used in the earlier 1990-based Census analysis. Assuming that non-metropolitan areas account for 13 percent of all single-family-owner mortgages and estimating that the single-family-owner market accounts for 74.5 percent of newly-mortgaged dwelling units, then the non-metropolitan underserved area differential of 8 percent would raise the overall market estimate by 0.78 percentage point—8 percentage points *times* 0.13 (non-metropolitan area mortgage market share) *times* 0.745 (single-family owner mortgage market share). Based on this calculation, if the 8 point differential reflected actual market conditions, then the underserved areas market share estimated using metropolitan area data should be increased by 0.78 percentage point to account for the effects of underserved counties in non-metropolitan areas, based on 2000 geography. A more conservative adjustment of 0.65 percentage points was made in Table D.15, which reports the results of the projection model.

Section G.3 reported that excluding manufactured housing loans (as well as small loans less than $15,000) reduced the overall underserved area market estimates based on 1990 geography by less than one percentage point (roughly three-quarters of a percentage point). Excluding manufactured housing loans leads to a similar reduction for the market estimates based on 2000 geography. As reported earlier, the small loan and

manufactured housing effects can be considered separately. Dropping only manufactured housing loans would reduce the market estimates by approximately three-fourths of a percentage point. ICF argued that loans with less than $15,000 should be excluded. The impact of doing this on the market estimates would be about one-third of a percentage point. ICF also considered scenarios where one-half of manufactured loans would be dropped, as well as small loans less than $15,000. The impact of doing this on the market estimates would be three-fifths of a percentage point.

The above analyses of the effects of less affordable market conditions, different assumptions about the size of the rental market, and dropping different categories of loans from the market definition suggest that the 35–39 percent range described earlier is a reasonable range for the market estimate for underserved areas based on the projection model described earlier. This range incorporates market affordability conditions that are more adverse than have existed recently and it excludes B&C loans from the market estimates.

5. Conclusions

Based on the above findings as well as numerous sensitivity analyses, HUD concludes that 35–39 percent is a reasonable estimate of mortgage market originations that would qualify toward achievement of the Geographically Targeted Goal if purchased by a GSE. The 35–39 percent range is higher than the market range in the 2000 Rule mainly because it is based on 2000 Census geography which includes more underserved census tracts than 1990 Census geography. HUD recognizes that shifts in economic and housing market conditions could affect the size of this market; however, the market estimate allows for the possibility that adverse economic conditions can make housing less affordable than it has been in the last few years. In addition, the market estimate incorporates a range of assumptions about the size of the multifamily market and excludes B&C loans.

H. Size of the Conventional Conforming Market for the Special Affordable Housing Goal

This section presents estimates of the conventional conforming mortgage market for the Special Affordable Housing Goal. The special affordable market consists of owner and rental dwelling units which are occupied by, or affordable to: (a) Very-low-income families; *or* (b) low-income families in low-income census tracts; *or* (c) low-income families in multifamily projects that meet minimum income thresholds patterned on the low-income housing tax credit (LIHTC).[75] HUD estimates that the special affordable

market is 23–27 percent of the conventional conforming market.

HUD is proposing to establish each GSE's special affordable multifamily subgoal as 1.0 percent of its average annual dollar volume of total (single-family and multifamily) mortgage purchases over the 2000–2002 period. In dollar terms, the Department's proposal is $5.49 billion per year in special affordable multifamily purchases for Fannie Mae, and $3.92 billion for Freddie Mac. The multifamily special affordable goal, as well as the special affordable home purchase subgoal, are discussed further in Appendix C.

Section F described HUD's methodology for estimating the size of the low- and moderate-income market. Essentially the same methodology is employed here except that the focus is on the very-low-income market (0–60 percent of Area Median Income) and that portion of the low-income market (60–80 percent of Area Median Income) that is located in low-income census tracts. Data are not available to estimate the number of renters with incomes between 60 and 80 percent of Area Median Income who live in projects that meet the tax credit thresholds. Thus, this part of the Special Affordable Housing Goal is not included in the market estimate.

1. Special Affordable Shares by Property Type

The basic approach involves estimating for each property type the share of dwelling units financed by mortgages that are occupied by very-low-income families or by low-income families living in low-income areas. HUD combined mortgage information from HMDA, the American Housing Survey, the Property Owners and Managers Survey and the recently released 2001 Residential Finance Survey in order to estimate these special affordable shares.

a. Special Affordable Owner Percentages

HMDA data for the percentage of single-family-owners that qualify for the Special Affordable Goal are reported in Table D.16. That table also reports data for the two components of the Special Affordable Goal—very-low-income borrowers and low-income borrowers living in low-income census tracts. Focusing first on home purchase loans, HMDA data show that the special affordable share of the market has followed a pattern similar to that discussed earlier for the low- and moderate-income loans. The percentage of special affordable borrowers increased significantly between 1992 and 1994, from 10.4 percent of the conforming market in 1992 to 12.6 percent in 1993, and then to 14.1 percent in 1994. Between 1995 and 1998, the special affordable market was in the 14–16 percent range, averaging 15.1 percent. Over the past five years (1999–2003), the special affordable share of the home purchase loans has averaged 16.4 percent. It was about 17 percent during 1999 and 2000 and 16 percent during the most recent three years, 2001 to 2003.

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[74] Between 1999 and 2002, 2000-based underserved census tracts accounted for 31.4 percent (unweighted annual average) of all mortgages in metropolitan areas. This 1999–02 average percentage for single-family owners in metropolitan area is lower than the underserved area percentage reported in previous paragraphs. To be comparable with the non-metropolitan data, these metropolitan area data do not include loans originated by lenders that specialize in manufactured housing loans and B&C loans, excluding these loans lowers the underserved areas share.

[75] There are two LIHTC thresholds: at least 20 percent of the units are affordable at 50 percent of AMI or at least 40 percent of the units are affordable at 60 percent of AMI.

Table D.16

Special Affordable Share of
Single-Family-Owner Mortgage Market: 1992-2003 HMDA Data

	Home Purchase		Refinance		Total	
	Conforming Market	Market W/O B&C Loans	Conforming Market	Market W/O B&C Loans	Conforming Market	Market W/O B&C Loans
1. Very Low Income Share						
1992	8.7 %	8.7 %	4.5 %	4.4 %	5.8 %	5.8 %
1993	10.8	10.8	5.8	5.7	7.3	7.2
1994	11.9	11.9	11.0	10.6	11.5	11.3
1995	12.0	12.0	12.3	11.7	12.1	11.9
1996	12.7	12.7	13.0	12.2	12.8	12.5
1997	12.9	12.9	14.4	13.3	13.6	13.0
1998	13.3	13.2	11.3	10.4	12.1	11.4
1999	15.0	14.7	16.2	14.8	15.6	14.8
2000	14.5	14.2	18.9	17.5	16.2	15.4
2001	13.6	13.5	12.3	11.7	12.7	12.3
2002	13.8	13.8	12.3	11.8	12.7	12.4
2003	13.6	13.7	11.8	11.5	12.2	12.0
2. Low-Income Borrower in Low-Income Area						
1992	1.7 %	1.7 %	1.1 %	1.1 %	1.3 %	1.3 %
1993	1.8	1.8	1.2	1.2	1.4	1.4
1994	2.2	2.2	2.3	2.2	2.3	2.2
1995	2.4	2.4	2.7	2.5	2.5	2.4
1996	2.3	2.3	2.6	2.4	2.4	2.3
1997	2.3	2.2	3.0	2.7	2.6	2.5
1998	2.2	2.2	2.2	1.9	2.2	2.0
1999	2.3	2.3	3.0	2.7	2.7	2.4
2000	2.4	2.4	3.6	3.3	2.9	2.7
2001	2.2	2.2	2.2	2.1	2.2	2.1
2002	2.3	2.2	2.1	1.9	2.1	2.0
2003	2.3	2.2	2.0	1.9	2.1	2.0
3. Special Affordable Share						
1992	10.4 %	10.4 %	5.5 %	5.5 %	7.1 %	7.1 %
1993	12.6	12.6	7.0	6.9	8.6	8.6
1994	14.1	14.1	13.2	12.8	13.7	13.5
1995	14.4	14.4	14.9	14.2	14.6	14.3
1996	15.0	15.0	15.6	14.6	15.3	14.8
1997	15.2	15.1	17.5	16.0	16.2	15.5
1998	15.6	15.4	13.5	12.3	14.2	13.5
1999	17.3	17.0	19.2	17.5	18.3	17.3
2000	16.9	16.6	22.6	20.8	19.1	18.1
2001	15.8	15.6	14.6	13.8	15.0	14.5
2002	16.2	16.1	14.3	13.8	14.9	14.4
2003	15.9	15.9	13.8	13.4	14.3	14.0

Source: HMDA data in metropolitan areas. See text for the method for excluding B&C loans from the market.

Considering all (home purchase and refinance) loans during recent "home purchase" environments, the special affordable share averaged 18.7 percent during 1999–2000, over three percentage points more than the 15.4 percent average between 1995 and 1997. Excluding B&C (all subprime) loans from the analysis reduces this differential only slightly to 2.8 (2.4) percentage points. As mentioned earlier, lending patterns could change with sharp changes in the economy, but the fact that there have been several years of strong affordable lending suggests that the special

affordable market has changed in fundamental ways from the mortgage market of the early 1990s.

Except for the four years of heavy refinancing (1998, 2001, 2002, and 2003), the special affordable share of the refinance market has recently been higher than the special affordable share of the home purchase market—a pattern discussed in Section F for low-mod and very-low-income loans. During 1999 (2000), for example, the special affordable share of the refinance market was 19.2 (22.6) percent, compared with 17.3 (16.9) percent for the home loan market. The

higher special affordable percentages for refinance loans are reduced or even eliminated if subprime loans are excluded from the analysis. As shown in Table D.16, excluding B&C loans from the data practically eliminates the refinance-home-purchase differential for 1999 and reduces the differential for 2000 to 4.2 percentage points (from 5.7 percentage points). Going further and excluding A-minus loans from the year 2000 data would reduce the differential to 2.7 percentage points. HUD's projection model excludes B&C loans and sensitivity analyses will show the effects on

the overall special affordable market of excluding all single-family subprime loans.

New 2000-Based Census Geography and New OMB Metropolitan Area Definitions. Going forward, HUD will be re-benchmarking its median incomes for metropolitan areas and non-metropolitan counties based on 2000 Census incomes, will be defining low-income census tracts (which are included in the definition of special affordable) in terms of the 2000 Census geography, and will be incorporating the effects of the new OMB metropolitan area definitions. As discussed earlier in Section F, HUD projected the effects of these three changes on the special affordable shares of the market for the years 1999–2003; the results for special affordable loans are reported in the top portion of Table D.8b. Under the historical MSA-based data, the (unweighted) average special affordable share of the conventional conforming market was 16.4 (16.3) percent for home purchase (total) loans (see Table D.16); the corresponding average with the CBSA-based projected data was 16.4 (16.4) percent, or practically the same. Given these small differences there is no need to adjust the overall market estimates reported below to account for the new data. However, it should be noted that the most recent year of 2003 does show a rather larger difference—the special affordable share of home purchase loans under the projected CBSA approach is 16.9 percent, which is a full percentage point higher than the special affordable share of 15.9 percent under historical data.[76]

For the other two property types (single-family rental and multifamily), comparisons between projected and historical special affordable percentages were made using the GSEs' data. For single-family rental mortgages, the weighted average of Fannie Mae's (Freddie Mac's) special affordable percentage for the years 1999 to 2003 was 48.2 (48.7) percent using the historical data, compared with 49.6 (49.5) percent using the projected data. For multifamily mortgages, the weighted average of Fannie Mae's (Freddie Mac's) special affordable percentage for the years 1999 to 2003 was 50.9 (48.7) percent using historical data, compared with 51.6 (51.5) percent using the projected data. These comparisons suggest little difference between the historical and projected special affordable shares for rental properties. HUD also projected the overall special affordable percentage for each GSE. For the overall special affordable goal (considering all three property types), the unweighted average of Fannie Mae's (Freddie Mac's) special affordable percentage for the years 1999 to 2002 was 20.0 (18.9) percent using the projected data, compared with 20.0 (18.9) percent using the historical data. There is little difference in the GSEs' average special affordable performance between the projected and historical data.

b. Very-Low-Income Rental Percentages

Table D.14 in Appendix D of the 2000 Rule reported the percentages of the single-family rental and multifamily stock affordable to

very-low-income families. According to the AHS, 59 percent of single-family units and 53 percent of multifamily units were affordable to very-low-income families in 1997. The corresponding average values for the AHS's six surveys between 1985 and 1997 were 58 percent and 47 percent, respectively. As discussed earlier in Section F, an important issue concerns whether rent data based on the existing rental stock from the AHS can be used to proxy rents of newly mortgaged rental units. HUD's analysis of POMS data during the 2000 rule-making process suggested that it could—estimates from POMS of the rent affordability of newly-mortgaged rental properties are quite consistent with the AHS data on the affordability of the rental stock. Fifty-six (56) percent of single-family rental properties with new mortgages between 1993 and 1995 were affordable to very-low-income families, as were 51 percent of newly-mortgaged multifamily properties. These percentages for newly-mortgaged properties from the POMS are similar to those reported above from the AHS for the rental stock. Based on this POMS analysis, HUD's baseline model in the 2004 proposed GSE rule assumed that 50 percent of newly-mortgaged, single-family rental units, and 47 percent of multifamily units, were affordable to very-low-income families. (See further discussion of this issue in Section H.1.d)

c. Low-Income Renters in Low-Income Areas

HMDA does not provide data on low-income renters living in low-income census tracts. As a substitute, HUD used the POMS and AHS data. As explained in the 2000 GSE Rule, the share of single-family and multifamily rental units affordable to low-income renters at 60–80 percent of area median income (AMI) and located in low-income tracts was calculated using the internal Census Bureau AHS and POMS data files.[77] The POMS data showed that 8.3 percent of the 1995 single-family rental stock, and 9.3 percent of single-family rental units receiving financing between 1993 and 1995, were affordable at the 60–80 percent level and were located in low-income census tracts. The POMS data also showed that 12.4 percent of the 1995 multifamily stock, and 13.5 percent of the multifamily units receiving financing between 1993 and 1995, were affordable at the 60–80 percent level and located in low-income census tracts.[78]

[77] Affordability was calculated as discussed earlier in Section F, using AHS monthly housing cost, monthly rent, number of bedrooms, and MSA location fields. Low-income tracts were identified using the income characteristics of census tracts from the 1990 Census of Population, and the census tract field on the AHS file was used to assign units in the AHS survey to low-income tracts and other tracts. POMS data on year of mortgage origination were utilized to restrict the sample to properties mortgaged during 1993–1995.

[78] During the 1995 rule-making process, HUD examined the rental housing stock located in low-income zones of 41 metropolitan areas surveyed as part of the AHS between 1989 and 1993. While the low-income zones did not exactly coincide with low-income tracts, they were the only proxy readily available to HUD at that time. Slightly over 13 percent of single-family rental units were both affordable at the 60–80 percent of AMI level and

The baseline analysis in HUD's proposed GSE rule assumed that 8 percent of the single-family rental units and 11.0 percent of multifamily units are affordable at 60–80 percent of AMI and located in low-income areas.

Combining the assumed very-low-income percentage of 50 percent (47 percent) for single-family rental (multifamily) units with the assumed low-income-in-low-income-area percentage of 8 percent (11 percent) for single-family rental (multifamily) units yields the special affordable percentage of 58 percent (58 percent) for single-family rental (multifamily) units. This was the baseline case in the 2004 proposed GSE rule.

d. Comments on the Special Affordable Rental Share and Additional Analysis

Both ICF and Fannie Mae commented that HUD overstated the special affordable share of the single-family rental and multifamily rental markets. They argued that updated 2001 AHS data showed that the affordability of the rental housing stock had declined since HUD had conducted its POMS and AHS analyses in 1995 and 1997, respectively. For both single-family (SF) and multifamily (MF) rentals, ICF used a special affordable range of 47–53 percent, with a baseline of 50 percent. ICF's special affordable range is much less than both HUD's 53–61 percent range (58 percent baseline) for single-family rentals and HUD's 54–62 percent range for multifamily rentals (also a 58 percent baseline). Since SF and MF rentals account for about 25 percent of financed units in HUD's model, reducing the SF and MF baselines from 58 percent (HUD's baseline) to 50 percent (ICF's baseline) would reduce the overall special affordable market estimate by two percentage points. Thus, this is an important issue.

Based on its analysis of the AHS (see Fannie Mae Appendix, I–31–I–32), Fannie Mae concluded that the very-low-income share for single-family rental properties had fallen from 58.3 percent in 1997 to 53.0 percent in 2001; similarly, the very-low-income (VLI) share of multifamily rental properties had fallen from 52.0 percent to 44.9 percent over this same period. (By comparison, ICF estimated that 47 percent of the SF rental stock and 42 percent of the MF rental stock were affordable to VLI families.) In its analysis, Fannie Mae provides a weight of 0.07 to the VLI share (25.7 percent) of recently-constructed single-family rental units in the AHS, and the residual 0.93 weight to the VLI share (53.6 percent) of the remaining existing units in the AHS. While Fannie Mae uses a VLI share of 46 percent for single-family rentals in its market sizing models, applying these weights to the 2001 AHS data (reported by Fannie Mae in Table I.7 on p. I–32) yields approximately 52 percent for the VLI share of single-family rental properties. Similarly, for multifamily properties, Fannie Mae provides a weight of 0.11 to the VLI share (22.2 percent) of recently-constructed multifamily rental units in the AHS, and the residual 0.89 weight to the VLI share (45.7 percent) of the remaining existing units in the AHS. In this case,

[76] As noted earlier, this discrepancy could be due to mis-measurement from the technique for apportioning 2003 data, which is defined in 2000-census geography, to a 1990-based geography.

located in low-income zones; almost 16 percent of multifamily units fell into this category.

applying the above weights to the 2001 AHS data yields 43 percent for the VLI share of multifamily rental properties—a figure similar to the 41-percent VLI share that Fannie Mae uses in its market sizing models. After computing a VLI share of 46 percent for SF rentals, Fannie Mae adds 8 percent to account for low-income renters living in low-income census tracts (the second component of the special affordable category); this yields 54 percent for the special affordable share of SF rentals. After computing a VLI share of 41 percent for MF rentals, Fannie Mae adds 11 percent to account for low-income renters living in low-income census tracts; this yields 52 percent for the special affordable share of MF rentals. Thus, Fannie Mae's estimates are intermediate between ICF's (50 percent) and HUD's (58 percent). Since SF rentals account for 10.6 percent of financed units in HUD's model, reducing the SF baseline from 58 percent (HUD's baseline) to 54 percent (Fannie Mae's baseline) would reduce the overall special affordable market estimate by 0.42 percentage points. Since MF rentals account for 15.0 percent of financed units in HUD's model, reducing the MF baseline from 58 percent (HUD's baseline) to 52 percent (Fannie Mae's baseline) would reduce the overall special affordable market estimate by 0.90 percentage points. Combining these two reductions yields a 1.32 percentage point reduction in the overall special affordable market.

HUD is retaining its baseline of 58 percent for the special affordable share of both SF and MF rentals. Several sets of analyses led to this decision.

HUD updated its analysis with 2001 and 2003 AHS data. Using ICF's assumptions for an AHS analysis (see ICF Appendix, p. 45), the 2003 AHS data showed that 57 percent (67 percent) of single-family (multifamily) rental units would qualify as being affordable to VLI families. This analysis of the 2003 AHS used a new geocoded file that identified the specific metropolitan area or county location for each observation in the AHS. This allowed HUD to link accurate area median incomes (used to determine affordability) to each AHS observation, which represents a substantial improvement over previous AHS analyses that did not have the specific household location and thus had to rely on estimates of area median income in order to compute affordability ratios. This more accurate approach appears to produce higher affordability estimates than earlier analyses based on the non-geocoded AHS.

To derive an overall special affordable percentage, one must add the second component of the special affordable category—low-income renters living in low-income areas—to the VLI share. HUD's

analysis of POMS data and its analysis of 2003 AHS geocoded data suggest that low-income SF renters in low-income areas account for 22 percent of all SF low-income renters; GSE data for 2001 and 2002 suggest a slightly higher percentage.[79] With respect to MF properties, HUD's analysis of POMS data and its analysis of 2003 AHS geocoded data suggest that low-income MF renters in low-income areas accounted for 24–25 percent of all MF low-income renters; GSE data for 2001 and 2002 suggest a slightly lower percentage (21 percent). These shares can be applied to the 2003 AHS results for low-income renters. For SF rentals, the 22 percent share for low-income renters living in low-income census tracts can be multiplied by the 20 percent figure that the 2003 AHS produces for low-income SF renters, yielding estimate of 4.4 percent. This 4.4 percent is added to the VLI percentage of 67 percent for SF rentals to arrive at a special affordable estimate of 71 percent, based on the 2003 AHS. For MF rentals, the 25 percent share for low-income renters living in low-income census tracts can be multiplied by the 27 percent figure that the 2003 AHS produces for low-income MF renters, yielding an estimate of 6.7 percent.[80] This 6.7 percent is added to the VLI percentage of 57 percent for MF rentals to arrive at a special affordable estimate of 63 percent, based on the 2003 AHS. These 2003 AHS special affordable shares—67 percent for SF rental units and 63 percent for MF rental units—support HUD's use of a 58-percent baseline as the special affordable share of both SF and MF rental properties.

It is interesting to compare HUD's 58-percent baseline with the actual performance of Fannie Mae and Freddie Mac. For single-family rental mortgages, the weighted average of both Fannie Mae's and Freddie Mac's special affordable percentage for the years 1999 to 2003 was about 50 percent using projected CBSA data. For multifamily mortgages, the weighted average of Fannie Mae's special affordable percentage for the same years was 49 percent, while Freddie Mac's percentage was 52 percent. As ICF notes, the GSEs' below market performance may be due to their limited participation in the small multifamily market (ICF Appendix, p. 47).

[79] Fannie Mae's data exhibited some variation, standing at 33 percent in 2001 and 19 percent in 2001. Freddie Mac's percentage was 29 percent in both years.

[80] These adjustments for low-income renters living in low-income areas may be conservative. For SF (MF) rentals, the 2001 and 2002 figures for the GSEs were in the nine (eight) percent range.

2. Size of the Special Affordable Market

The size of the special affordable market depends in large part on the size of the single-family rental and multifamily markets and on the special affordable percentages of both owners and renters. Therefore, this section conducts several sensitivity analyses around these market parameters. As in the previous sections, this section initially assumes a refinance rate of 35 percent, which means that it initially focuses on a home purchase or low-refinancing environments. After presenting these results, market estimates reflecting a heavy refinance environment will be presented. In the 2000 GSE Rule, HUD assumed that the special affordable share of refinance loans was 1.4 percentage points lower than the special affordable share of borrowers purchasing a home. However, as discussed earlier, the special affordable share of refinance loans equaled or was greater than the special affordable share of home purchase loans during home purchase environments such as 1995–97 or 1999–2000; thus, the assumption of a lower special affordable share for refinance loans is initially dropped from the analysis but will be reintroduced during the sensitivity analysis and the discussion of heavy refinancing environments. If the special affordable share of refinance loans were assumed to be one percentage point less than that of home purchase loans, then the market shares in Table D.17 would be approximately one-quarter percentage point lower.[81]

Considering a 15.0-percent MF mix and a 8.5-percent investor mortgage share, the special affordable market estimates reported in Table D.17 are: 27.3 percent if the owner percentage is 17 percent (home purchase share for 1999 and 2000); 26.8 if the owner percentage is 16.4 percent (average home purchase share from 1999–2003); 26.5 percent if the owner percentage is 16 percent (home purchase share for 1998, 2001, 2002, and 2003); and 25.7 percent if the owner percentage is 15 percent (home purchase average from 1995–97). Considering a range of 13.5–16.0 for the MF mix and a range of 8.5–9.0 for the investor mortgage share, the special affordable market estimates reported in Table D.17 are: 26.7–27.9 percent if the owner percentage is 17 percent; 26.2–27.4 percent if the owner percentage is 16.4 percent; 25.9–27.1 percent if the owner percentage is 16 percent; and 25.1–26.3 percent if the owner percentage is 15 percent.

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[81] This is obtained by multiplying (a) 1.0 percentage point *by* (b) the refinance rate of 0.35 *by* (c) the 0.745 property share for SF owner loans.

Table D.17

Special Affordable Market Estimates

Sensitivity Analysis

Special Affordable Percentage for SF Owners	Multifamily Mix (Percent)																			
	12.25				13.5				14.25				15.0				16.0			
	8	8.5	9	9.5	8	8.5	9	9.5	8	8.5	9	9.5	8	8.5	9	9.5	8	8.5	9	9.5
19	27.7	27.9	28.1	28.3	28.1	28.3	28.5	28.8	28.4	28.6	28.8	29.0	28.7	28.9	29.1	29.3	29.0	29.2	29.5	29.7
18	26.8	27.1	27.3	27.5	27.3	27.5	27.7	28.0	27.6	27.8	28.0	28.2	27.9	28.1	28.3	28.5	28.2	28.5	28.7	28.9
17	26.0	26.2	26.5	26.7	26.5	26.7	26.9	27.2	26.8	27.0	27.2	27.5	27.1	27.3	27.5	27.7	27.5	27.7	27.9	28.1
16	25.2	25.4	25.7	25.9	25.7	25.9	26.1	26.4	26.0	26.2	26.4	26.7	26.3	26.5	26.7	27.0	26.7	26.9	27.1	27.3
15	24.3	24.6	24.8	25.1	24.9	25.1	25.3	25.6	25.2	25.4	25.6	25.9	25.5	25.7	25.9	26.2	25.9	26.1	26.3	26.6
14	23.5	23.8	24.0	24.3	24.0	24.3	24.5	24.8	24.4	24.6	24.8	25.1	24.7	24.9	25.2	25.4	25.1	25.3	25.6	25.8
13	22.7	23.0	23.2	23.5	23.2	23.5	23.7	24.0	23.6	23.8	24.1	24.3	23.9	24.1	24.4	24.6	24.3	24.5	24.8	25.0
12	21.9	22.1	22.4	22.7	22.4	22.7	22.9	23.2	22.7	23.0	23.3	23.5	23.1	23.3	23.6	23.8	23.5	23.8	24.0	24.3
11	21.0	21.3	21.6	21.8	21.6	21.9	22.1	22.4	21.9	22.2	22.5	22.7	22.3	22.5	22.8	23.1	22.7	23.0	23.2	23.5
10	20.2	20.5	20.8	21.0	20.8	21.1	21.3	21.6	21.1	21.4	21.7	21.9	21.5	21.7	22.0	22.3	21.9	22.2	22.5	22.7

Investor Mortgage Share (Percent)

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If the special affordable percentage for home purchase loans fell to 13 percent—or by three percentage points below its 1995–2003 average level of approximately 16 percent—then the overall market estimate would be about 24 percent under the baseline assumptions. Thus, 24 percent is consistent with a rather significant decline in the special affordable share of the single-family home purchase market. A 24 percent market estimate allows for the possibility that adverse economic and housing affordability conditions could keep special affordable families out of the housing market. On the other hand, if the special affordable home purchase percentage stays at its recent levels (15–17 percent), the market estimate is in the 26–27 percent range.

Different Special Affordable Shares for Rental Properties. Case 2 (see Table D.9) considered smaller special affordable percentages for rental properties (53 percent for SF rentals and 54 percent for MF rentals), as compared with the baseline Case 1, which assumed 58 percent for both property types. Case 2 assumptions are close to Fannie Mae's assumptions—54 percent for SF Rentals and 52 for MF Rentals. Incorporating the Case 2 assumptions reduces the special affordable market estimate by 1.2 percentage points. For example, if the SFO home purchase share is 17 percent, then the overall special affordable estimate is 26.1 percent under Case 2, as compared with 27.3 percent under Case 1 (see Table D.17).

ICF's assumptions were even lower, 50 percent for both SF and MF rentals, a figure that is eight percentage points lower than HUD's baseline Case 1 assumption of 58 percent for each of these two property types. Given that these two property types account for 25 percent of all financed dwelling units, using ICF's 50-percent assumption (instead of HUD's 58-percent assumption) would reduce the overall special affordable market shares in Table D.17 by two percentage points. As discussed above, HUD's baseline Case 1 assumptions offer a reasonable approach for estimating the special affordable market shares.

Multifamily Mix. The volume of multifamily activity is also an important determinant of the size of the special market. While Section C explained the rationale for HUD's 15.0 percent range, it is useful, given the uncertainty surrounding the size of the multifamily market, to consider the effects of lower multifamily mix assumptions, even in a home purchase environment. Assuming a 13.5 percent MF mix reduces the overall special affordable market estimates by 0.4 percentage points compared with a 15 percent MF mix, and by 1.0 percentage point compared with a 16.0 percent mix. For example, when the special affordable share of the home purchase market is at 16.4 percent (its 1999–2003 average), the special affordable share of the overall market is 26.2 percent assuming a 13.5 percent multifamily mix, compared with 26.8 (27.4) percent assuming a 15 (16.0) percent multifamily mix.

As shown in Table D.17, the ICF's MF mix of 14.2 percent produces results intermediate between HUD's 13.5 percent and 15.0 percent. Estimates of the special affordable

market based on a MF mix of 14.2 percent are only 0.3 percentage points less than those based on a MF mix of 15.0 percent. Fannie Mae's model combined an even lower MF mix of 12.3 percent with an investor mortgage share of 8.0 percent. If the special affordable share of home purchase loans is 16.4 percent (the 1999–2003 average), then the estimate for the overall special affordable market is 25.2 percent based on Fannie Mae's assumptions. In contrast, HUD's estimates (with a MF mix of 15.0 percent and 8.5–9.0 percent investor share) are 26.8–27.0 percent "about one and a half percentage points higher. If the special affordable share of home purchase loans is 16 percent (its recent 2001–2003 level), then Fannie Mae's assumptions result in a market estimate of 25.2 percent while HUD's assumptions (see previous sentence) result in market estimates of 26.5–26.7 percent.

Investor Mortgage Share. As shown in Table D.17, increasing the investor mortgage share by one percentage point from 8.0 percent to 9.0 percent increases the special affordable market estimate by approximately 0.4–0.5 percentage point. If the 10.0 percent baseline from the 2004 proposed GSE rule were used in this analysis, the market estimates would be approximately 0.6 (0.4) percentage points higher relative to the results reported in Table D.15 for a baseline of 8.5 (9.0) percent.

Examples of Home Purchase Years. The above projection results for a home purchase environment can be compared with actual results for two home purchase years, 1999 and 2000, which were characterized by refinance rates of 34 percent and 29 percent, respectively. For 1999, the baseline model assumed a multifamily mix of 16.0 percent and a mortgage investor share of 8.2 percent. Under these assumptions, the 1999 market estimate is 27.9 percent; if the 1999 MF mix was lower—for example, 15.0 (14.0) percent instead of 16.0 percent—then the estimate of the 1999 special affordable market share would be 27.5 (27.2) percent.

The 2004 proposed rule (Table D.9 in Appendix D) reported a higher baseline market estimate for 1999 of 29.2 percent, as compared with the 27.9 percent reported in the previous paragraph—a differential of 1.3 percentage points. The difference is largely due to the treatment of single-family rental mortgages. For example, using the proposed rule's 10-percent assumption for the mortgage investor share (instead of the lower 8.2 percent HMDA-based mortgage investor shares reported in the text) would increase the 1999 estimate by 0.8 percentage points to 28.7 percent, only 0.5 percentage points lower than the 29.2 percent reported in the proposed rule. Other more minor changes that lower market estimate included: (a) Further reducing the SF mortgage investor share by excluding B&C investor loans from the HMDA data (see Section C); (b) using 1.6 percent (instead of 2.0 percent) for the mortgage share of single-family 2–4 property owners; and (c) using slightly lower dwelling-units-per-mortgage assumptions for SF 2–4 properties (2.20 instead of 2.25) and for SF investor mortgages (1.30 instead of 1.35). These changes, leading to this 1.3 percentage point differential, also affect the

estimates reported in Table D.9 of Appendix D of the proposed rule for the three home purchase environments prior to 1999—28.9 percent for 1995, 28.7 for 1996, and 28.8 percent for 1997.[82] Given (a)–(c) and the fact that the HMDA-reported mortgage investor share was approximately eight percent during these three years (instead of the assumed 10 percent in the earlier 1995–97 analysis), these estimates should probably be reduced by the above-mentioned 1.3 percentage points, which would place them at 27–28 percent assuming no adjustment in the baseline MF mix, and at 26–27 percent assuming a MF mix three percentage points lower than the baseline MF mix.[83]

For 2000, the baseline model assumed a multifamily mix of 17.2 percent and a mortgage investor share of 9.1 percent. Under these assumptions, the 2000 special affordable market is estimated to be 29.1 percent. A lower MF mix—for example, 15.0 percent instead of 17.2 percent—would reduce the estimated 2000 low-mod market share to 28.2 percent.[84]

ICF's best estimates for the special affordable market were 25–26 percent in 1995, 1997, 1999, and 2000, and a particularly low 23 percent for 1996 (ICF Appendix, p. 94). Its lower bound estimates were 22–23 percent for 1997 and 1999, 24 percent for 1995 and 2000, and 21 percent for 1996 (ICF Appendix, p. 99). As discussed earlier, two percentage points of the HUD–ICF differential involves ICF's lower assumptions about the special affordable characteristics of rental loans. Given that the SFO percentage was 18–19 percent during 1999 and 2000 (see Table D.16), ICF's 23–24 estimates for 1999 and 2000 are in need of further explanation.

Heavy Refinancing Environments. The special affordable share of the overall market declines when refinances dominate the market. Section F.3c, which presents the low-mod market estimates, explained the assumptions for incorporating a refinance environment into the basic projection model for 2005–08. Briefly, they are: the refinance share of single-family mortgages was increased to 65 percent (from 35 percent); the multifamily mix was allowed to vary from 6 to 12 percent; the market share for subprime

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[82] These three estimates were initially reported in HUD's 2000 Final Rule, and repeated in Table D.9 of Appendix D of the 2004 proposed GSE rule.

[83] To provide some confirmation for these 1995–1997 estimates, HUD went back and re-estimated the model for 1997. As shown in Table D.9 of the 2004 GSE Proposed Rule (as well as in Table D.15 of the 2000 GSE Rule), HUD had earlier estimated a special affordable share of 28.8 percent for 1997 (which was practically the same as the 28.9-percent share estimated for 1995 and the 28.7-percent share estimated for 1996). With a lower investor share (8.4 percent instead of 10.0 percent) and other changes mentioned in the text, the new estimate for the 1997 special affordable market was 28.0 assuming a multifamily mix of 19.3 percent. If the multifamily mix is reduced to 17.3 (16.3) percent, the special affordable share of the 1997 market is 27.1 (26.7) percent. The 26.7–28.0 percent range for 1997 is consistent with the 1995–1997 ranges reported in the text.

[84] Using the projected CBSA data (instead of the historical 1990-based MSA data) did not change the special affordable market estimate in either 1999 or 2000.

loans was reduced to 8.5 percent (from 12 percent); and the mortgage investor share was set at 8.0 percent (its average during recent refinancing waves). With respect to MF mixes, it is likely that an 11–12 percent MF mix characterized 2001, 9–11 percent characterized 2002, and less than 7 percent characterized 2003, although there is some uncertainty with these estimates. In a refinancing wave, the special affordable percent is typically lower for refinance loans than home purchase loans, as middle- and high-income borrowers dominate the market. With respect to the special affordable characteristics of SF owner loans, the refinancing analysis assumed 16 percent for home purchase loans and 14 percent for refinance loans, which were the average special affordable percentage for the last four refinance years (1998, 2001, 2002, and 2003). There has been a two percentage point differential between home purchase loans and refinance loans during a heavy refinancing environment.

As shown in Table D.11, the special affordable shares varied by over two percentage points, from 24.1 percent with a 12 percent MF mix to 21.7 percent with a 6 percent MF mix. These special affordable market shares are 3–5 percentage points lower than the special affordable shares reported in Table D.17 for HUD's baseline home purchase environment. Notice that the special affordable share remains in the 22–23 percent range even if the MF mix falls to 6–8 percent. In addition to higher-income borrowers dominating the single-family market, the share of the "goals rich" rental market declines in a refinancing wave, which tends to further reduce the special affordable of market activity. The right-hand column of Table D.11 shows that the rental share falls to the 17–22 percent range, or 4–9 percentage points less that the almost 26-percent rental share in HUD's baseline model.

Model estimates were also made for the recent refinancing years of 1998, 2001, 2002, and 2003. For 1998, the baseline model assumed a multifamily mix of 14.0 percent and a mortgage investor share of 6.8 percent. Under these assumptions, the 1998 market estimate is 24.0 percent. If the MF mix for 1998 had been 13.0 (12.0) percent then the estimated special affordable market share for 1998 would be 23.5 (23.1) percent. For 2001, the baseline model assumed a multifamily mix of 13.5 percent and a mortgage investor share of 7.8 percent. Under these assumptions, the 2001 market estimate for special affordable loans is 25.0 percent. If the MF mix for 2001 had been 12.0 percent, instead of the baseline of 13.5 percent, then the estimated special affordable market share for 2001 would be 24.4 percent. For 2002, the baseline model assumed a multifamily mix of slightly over 11.0 percent and a mortgage investor share of 7.8 percent. Under these assumptions, the 2002 special affordable market is estimated to be 24.3 percent.[85] A

lower MF mix—for example, 10.5 (9.5) percent instead of 11 percent—would reduce the estimated 2002 special affordable market share to 24.2 (23.7) percent. [86][87]

As explained in Section F.3b, HUD has not yet completed its analysis of 2003 data. However, HUD developed some rough projections for different assumptions about the MF mix. Combining an investor mortgage share of 8.2 from HMDA with different MF mixes (ranging from 6 percent to 8 percent) produced estimates of 22.6 percent (MF mix of 6 percent) to 23.5 percent (MF of 8 percent).

As shown by both the simulation results in Table D.17 and the actual experience during 2001–2003, the special affordable share of the overall market declines when refinances dominate the market. The special affordable share was approximately 24 percent during 2001 and 2002 and 23 percent in 2003 (although there is some uncertainty with the 2003 estimate).

The various market estimates presented in Table D.17 for a home purchase environment and reported above for a refinance environment are not all equally likely. Most of them equal or exceed 23 percent. In the home purchase environment, estimates below 23 percent would require the special affordable share for home purchase loans to drop to 12 percent which would be 4 percentage points lower than the 1995–2003 average for the special affordable share of the home purchase market. As shown in Table D.11, dropping below 23 percent would be more likely in a heavy refinance environment, particularly those characterized by extremely low MF mixes of 7 percent or less.

As stated in Sections F and G above, HUD received a number of public comments seeking a regulatory solution to the issue of the ability of the GSEs to meet the housing goals during a period when refinances of home mortgages constitute an unusually large share of the mortgage market. As explained in the Preamble, HUD is not addressing the refinance issue in this final rule. Elsewhere in the **Federal Register**, HUD is publishing an Advance Notice of Proposed Rulemaking that advises the public of HUD's intention to consider by separate rulemaking a provision that recognizes and takes into consideration the impact of high volumes of refinance transactions on the GSEs' ability to achieve the housing goals in certain years, and solicits proposals on how such a provision should be structured and

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mortgages. In addition, the SF0 percentage for home purchase loans originated during 2002 was lowered by approximately 0.2 percentage point in the Final Rule.

[86] Using the projected CBSA data (instead of the historical 1990-based MSA data) resulted in only small changes in the special affordable market estimates for 2001 (a 0.1 percentage point decline) and 2002 (a 0.5 percentage point decline).

[87] For the years 1999 to 2002, Fannie Mae estimated a special affordable market share of 23–25 percent. (This is their estimate assuming no missing data; see their Table I.9, page I–34.) This compares with HUD's estimate of 25.9 percent to 26.6 percent. As discussed in Section C.6, Fannie Mae assumes a rather low MF mix (approximately 10 percent) in the model that generates its historical estimates.

implemented. HUD believes that it would benefit from further consideration and additional public input on this issue. HUD also notes (*see* above) that FHEFSSA provides a mechanism by which HUD can take into consideration market and economic conditions that may make the achievement of housing goals infeasible in a given year. (*See* 12 U.S.C. 1336(b)(e).)

B&C Loans. The procedure for dropping B&C loans from the projections is the same as described in Section F.3.c for the Low- and Moderate-Income Goal. The special affordable percentage for B&C loans is 28.0 percent, which is similar to the projected percentages for the overall market given in Table D.17. Thus, dropping B&C loans (as well as all subprime loans) does not appreciably reduce the overall market estimates. Consider the case of a single-family-owner percentage of 16 percent, which yields an overall market estimate for Special Affordable Goal of 26.7 percent if B&C loans are included in the analysis. Dropping B&C loans from the projection model reduces the special affordable market share by 0.2 percentage points to 26.5, as reported in Table D.17. Dropping all subprime loans (A-minus as well as B&C) would reduce the special affordable market projection to 26.2 percent.

Manufactured Housing Loans and Small Loans. Excluding manufactured housing loans and small loans (loans less than $15,000) reduces the overall market estimates reported in Table D.17 by less than one percentage point. This is estimated as follows. First, excluding these loans reduces the special affordable percentage for single-family-owner mortgages in metropolitan areas by about 1.5 percentage points, based on analysis of recent home purchase environments (1995–97 and 1999 and 2000). Multiplying this 1.5 percentage point differential by the property share (0.745) of single-family-owner units yields 1.1 percentage points, which serves as a proxy for the reduction in the overall special affordable market share due to dropping manufactured home loans from the market analysis. The actual reduction will be somewhat less because dropping manufactured home loans will increase the share of rental units, which increases the overall special affordable share, thus partially offsetting the 1.1 percent reduction. The net effect is probably a reduction of three-quarters to one percentage point.

The effects can be considered separately. Dropping only manufactured housing loans would reduce the market estimates by approximately one-half of a percentage point. ICF argued that loans with less than $15,000 should be excluded. The impact of doing this on the market estimates would be about one-third to four-fifths of a percentage point. ICF also considered scenarios where one-half of manufactured loans would be dropped, as well as small loans less than $15,000. The impact of doing this on the market estimates would be three-fifths to three-quarters of a percentage point.

The above analyses of the effects of less affordable market conditions, different assumptions about the size of the rental market, and dropping different categories of

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[85] The baseline estimates for 2001 (25.0 percent) and 2002 (24.3 percent) are lower than those (26.5 percent and 25.8 percent, respectively) reported in Table D.9 of Appendix D of the proposed rule. As explained earlier, the differences between the results in the proposed rule and this Final Rule are mainly due to the treatment of single-family rental

loans from the market definition suggest that 23–27 percent is a reasonable range of estimates for the low- and moderate-income market. This range covers markets without B&C and allows for market environments that would be much less affordable than recent market conditions.

Tax Credit Definition. Data are not available to measure the increase in market share associated with including low-income units located in multifamily buildings that meet threshold standards for the low-income housing tax credit. Currently, the effect on GSE performance under the Special

Affordable Housing Goal is rather small. For instance, adding the tax credit condition increased Fannie Mae's performance as follows: 0.42 percentage point in 1999 (from 17.20 to 17.62 percent); 0.59 percentage point in 2000 (from 18.64 to 19.23 percent); and 0.43 percent point in 2001 (from 19.29 to 19.72 percent). The increases for Freddie Mac have been lower (ranging from 0.24 to 0.38 percentage point during the same period).

3. Conclusions

Sensitivity analyses were conducted for the market shares of each property type, for the very-low-income shares of each property

type, and for various assumptions in the market projection model. These analyses suggest that 23–27 percent is a reasonable estimate of the size of the conventional conforming market for the Special Affordable Housing Goal. This estimate excludes B&C loans and allows for the possibility that homeownership will not remain as affordable as it has over the past six years. In addition, the estimate covers a range of projections about the size of the multifamily market.

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